

**FRAMEWORK FOR IMPROVED ALTERNATIVE DISPUTE RESOLUTION PRACTICE
IN THE SRI LANKAN CONSTRUCTION INDUSTRY**

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Abstract

Alternative Dispute Resolution (ADR) methods are essential for resolving of the disputes in the construction industry. Currently ADR practices in the Sri Lankan construction industry have become unpopular among the construction practitioners mainly due to the cost and time spent on resolving disputes. Accordingly, this study addresses this unfortunate issue by identifying disputes, types of ADR, ADR attributes, theoretical procedures and current ADR practices related to the Sri Lankan construction industry, and by developing a framework for improved ADR practice. In developing the framework, this research was conducted adopting pragmatism as the paradigm. A literature review, semi-structured interviews with adjudicators/arbitrators and construction industry professionals, case studies of completed public sector construction projects and a questionnaire survey were the research methods employed. Finally, the developed framework was validated through focus group discussions. Eight categories of disputes and related causes of disputes were identified. Out of those eight causes of disputes: Lack of team spirit and lack of document communication, which were categorized under 'Human behavioural related disputes' are the most commonly occurring disputes in the Sri Lankan construction industry. Also identified was that there are five commonly used ADR methods in the Sri Lankan construction industry. Negotiation, mediation, and conciliation are voluntary methods and, according to the Standard Bidding Document (SBD) from the Construction Industry Development Authority (CIDA), adjudication and arbitration are contractual obligations. This study demonstrates that even though the three voluntary methods feature many positives in comparison to adjudication and arbitration, lack of enforceability of the decisions and parties' attitudes do not encourage their use in dispute resolution in Sri Lanka. On the other hand, adjudication and arbitration appear to be more costly, time consuming and do not encourage continuing the business relationship among the parties. Additionally, the neutrality of the third party in adjudication and arbitration was raised as a concern by some contracting parties. Since the adjudication is practised according to the SBD, and arbitration is based on the Arbitration Act 11 of 1995 Sri Lanka, several theoretical ADR attributes are not applicable. The framework developed contains two components namely, "process" and "criteria". Process includes the procedure adopted in ADR, and criteria

include the decisions needed during the process. The developed framework is applicable for two ADR methods namely adjudication and arbitration which are contractual obligations for the contracting parties. The framework was validated through a focus group. The study highlights the importance of minimizing disputes, improving ADR, training construction professionals on teamwork, document communication, attitude improvement and ADR training. The results demonstrate the need to improve the role played by CIDA by reviewing in detail the nature of disputes and current ADR practices in Sri Lanka, and the need to develop new guidance and training for industry professionals to improve ADR practice. The developed framework makes a significant contribution to improve adjudication and arbitration practice in Sri Lankan construction industry. This research has also opened several further research opportunities in relation capacity building for ADR practice in the same context.

Key words: Construction Disputes, Alternative Dispute Resolution, Arbitration, Adjudication, Sri Lanka

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3	A critical review on mixed method approach	International Journal of Methodology

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Abbreviations

AA	Adjudicator Arbitrator
ADR	Alternative Dispute Resolution
CA	Consultant Architect
CE	Consultant Engineer
CEO	Chief Executive Officer
CIDA	Construction Industry Development Authority
CQS	Consultant Quantity Surveyor
FIDIC	The International Federation of Consulting Engineers
ICLP	Institute for the Development of Commercial Law & Practice
ICTAD	Institute for Construction Training and Development
QS	Quantity Surveyor
SBD	Standard Bidding Document
SE	Senior Engineer

CHAPTER 1

1.0 Introduction to the Research

1.1 Introduction

This chapter will provide an overview of the research. It will present the background to the study that justifies its contribution to the knowledge and the originality in this field.

1.2 Research Background

The Sri Lankan Construction industry represents 7.1 - 8.0 % of Gross Domestic Product (GDP) in relation to the provision of Services and Products (CBSL, 2019). A Sri Lankan Central Bank report in 2019 further revealed that the Sri Lankan construction industry provides 8.5% of employment opportunities in all industries in Sri Lanka. In addition, the Construction industry provides support for the functions of every industry with infrastructure facilities and the structures to facilitate services, commerce and utilities (Wibowo, 2009). Therefore, it is apparent that the Sri Lankan construction industry is playing a very important role in the country's economic, social and cultural development.

The complex nature of the construction industry, its challenging environment and the involvement of different knowledge-based professionals working towards one or more goals can often lead to disputes (Cakmak and Cakmak, 2014). Cakmak and Cakmak, (2014) presented different definitions made by previous scholars on dispute. Those are; "a specific disagreement concerning a matter of fact, law or policy in which a claim or assertion of one party is met with refusal, counterclaim or denial by another, incompatible activities, which occurs when the behaviour of one person is interfering or obstructing the actions of another". Corby, (2003) defines dispute as losing the parties' interest in being patient over a particular matter and Ndekugri and Russell, (2006) defined dispute as a matter which arises due to the rejection of

a claim made by one party to another. The definitions indicate the negative effect of one party in the project on another. Therefore, in this research dispute is considered as the rejection or unsatisfactory claim made by one party to another.

Sambasivan et al. (2017) argued that dispute has become one of the main causes of delay in construction. Over time, it has been found that delay, interruption, or suspension of the whole construction project are the main negative impacts of disputes on the construction industry (Lam and Chin, 2005; Rahim, 2010). As a result, all stakeholders in a construction project have a vested interest in preventative steps to control or avoid disputes, or at least minimize the transaction costs arising from dispute resolution (Thompson et al., 2000).

In that sense there are two major methods of dispute resolution in the construction industry such as litigation and alternative dispute resolution (ADR) (Gill et al., 2015). However, key issues concerning dispute resolution methods are the costs and time involved and the effect on long-term relationships (Loosemore, 1999). As a result, the construction industry has shown a marked preference towards ADR instead of litigation for five principal reasons: Speed, Cost, Expertise, Privacy and Practicality (Jannadia et al., 2000).

1.3 Research Problem

There is a growing body of literature that recognizes the importance of knowing causes of disputes and dispute resolution methods in the construction industry. Dispute is a common problem in the construction industry which is a barrier to having a timely completion of a project. Therefore, investigation into disputes and dispute resolution methods is one of the major concerns within the construction industry stakeholders.

Originally, litigation was the main dispute resolution method in the construction industry. However, due to the unbearable cost, time and effect on the business relationship, the court procedure has moved towards ADR from litigation.

Recently, there has been renewed interest in the cost and time spent on alternative dispute resolution methods practised in the construction industry. Even though ADR has been an

alternative to the expensive and time-consuming litigation, construction industry stakeholders make negative comments on the current ADR practices in the industry.

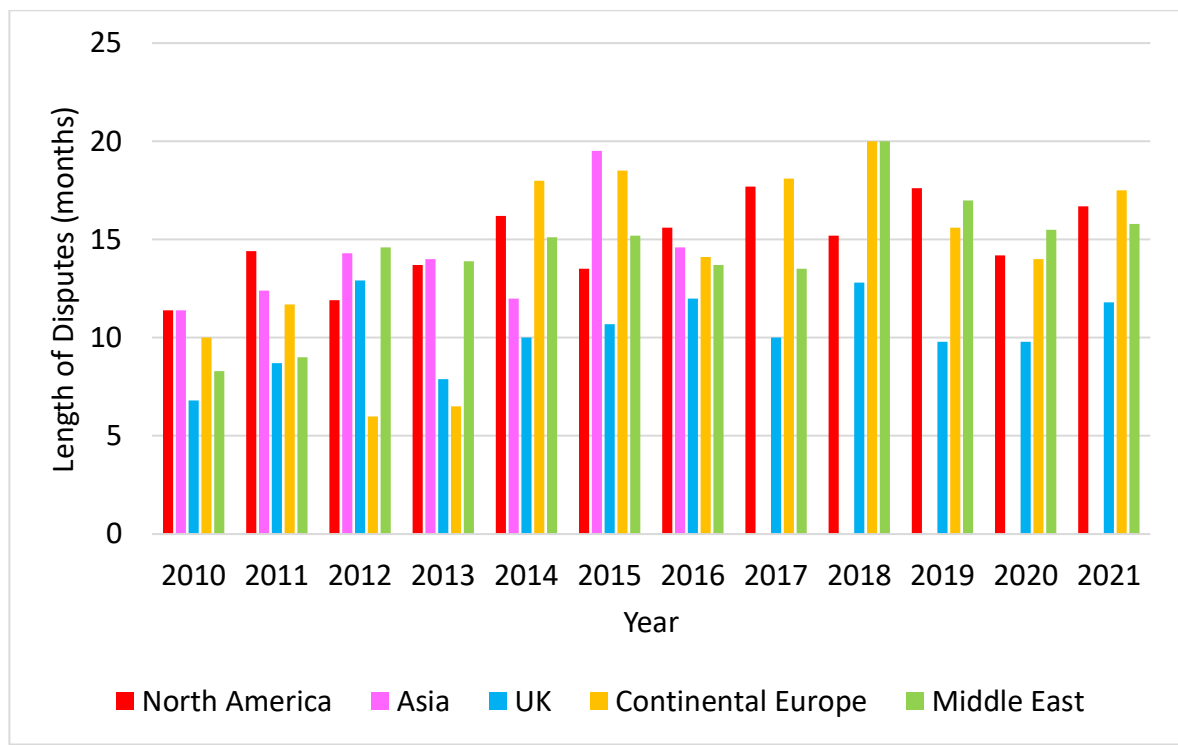


Figure 1- 1 Regional average length of Disputes (2010-2021) (Abstract from ARCADIS reports 2010-2021)

Figure 1.1 presents the average length of dispute resolution in the construction industry from year 2010 to 2021, regional wise. It can be seen the time range for dispute resolution are within 7-20 months. Also in year 2015 asian region has lead all the other regions by spending nearly 20 months for dispute resolution in the construction industry. Therefore, it is evident that in relation to the time spent for dispute resolution in the construction industry ADR practice is almost like the litigation practice.

Figure 1.2 shows the average values of dispute resolution in the global construction industry from 2010 to 2021, regional wise. The cost for dispute resolution has ranged between 5-110 million US dollars. According to the figure the cost for dispute resolution in the Asian region spread in between 40-90 million US dollars. Therefore, global construction industry spent larger amount of money to resolve disputes even though the ADR was in action.

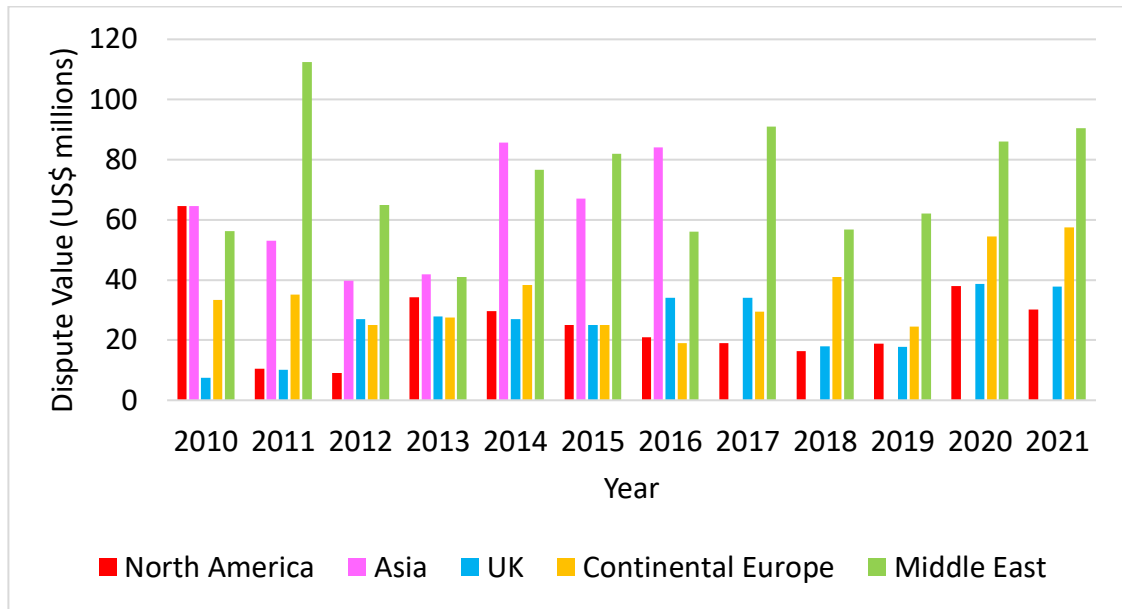


Figure 1 - 2 Regional average dispute values (2010-2021) (Abstract from ARCADIS reports 2010-2021)

As presented above the cost and time taken to complete and produce the decision in dispute resolution has become the major negative points in both litigation and ADR. In several cases the cost for ADR has become same, or more than, the claim amount in the Sri Lankan construction industry. On the other hand, it has taken years to complete the ADR process and produce solutions to the referred disputes.

This thesis has produced a framework for improved ADR practice within the Sri Lankan construction industry.

1.4 Research Question

With reference to the above stated research problem, the following is the proposed research question:

Why are Alternative Dispute Resolution practices in the Sri Lankan construction industry inefficient?

1.5 Research Aim and Objectives

Aim: To develop a framework for improved Alternative Dispute Resolution (ADR) practices for the Sri Lankan construction industry.

Objectives:

1. To examine the causes of disputes and their inter-relationships in relation to the Sri Lankan construction industry.
2. To explore the concept of ADR and its applicability for dispute resolution in the Sri Lankan construction industry.
3. To evaluate the current ADR practices with respect to attributes of ADR in the Sri Lankan construction industry.
4. To analyse the Sri Lankan construction industry specific aspects that are related to the successful implementation of ADR.
5. To develop and validate a framework for improved ADR practice for the Sri Lankan construction industry.

Accordingly, the following sub-research questions were formulated to support the successful design and execution of this study.

Questions:

1. What is the nature of inter-relationships among the causes of disputes relevant to the Sri Lankan construction industry?
2. What is the suitable ADR practice in the Sri Lankan construction industry to address the causes of disputes?
3. How does the current ADR practice in the Sri Lankan construction industry behave with respect to the attributes of ADR?
4. What are the industry specific aspects that related to the successful implementation of ADR in the Sri Lankan construction industry?

1.6 Scope of the research and Limitations

The construction industry is dynamic in nature. Therefore, the findings of this study will tend to change in the course of time. This study, however, was able to indicate some key problems in the construction industry in the present context. Follow up studies must be continued regularly over time. The framework produced will guide the construction industry stakeholders to use the current ADR practices efficiently. Out of all the available ADR methods, adjudication and arbitration have become industry stakeholders' contractual obligation with reference to dispute resolution. Therefore, the developed framework is for adjudication and arbitration. The theoretical positioning of ADR, as per the standard form of contract and the Arbitration Act No 11 of 1995 Sri Lanka, has followed in achieving the theoretical attributes of ADR. Therefore, the developed framework is rooted in the Act and the standard practices in the Sri Lankan construction industry.

1.7 Contribution to Knowledge

Loosemore (1999) identified the key issues concerning dispute resolution as the costs and time involved and the effect on long-term relationship. In contrast, Speed, Cost, Expertise, Privacy and Practicality are the five principal reasons to choose ADR instead of litigation (Jannadia et al., 2000). Similarly, Bruno et al., in 2017 stated that ADR is a cheaper dispute resolution method compared with litigation. However, research has shown that there is limited work on developing the ADR practices in the Sri Lankan construction industry.

Since disputes are inevitable in the construction industry, a cost- and time-effective ADR process will be a great relief to construction stakeholders in completing the project on time and within budget by securing the relationship among the parties. Although ADR is preferable to litigation in dispute resolution, the various methods of ADR have their different financial consequences. The purpose of this research is to improve the effectiveness of the ADR processes by developing a framework.

There are many research studies done by scholars throughout the world on disputes and dispute resolution methods in the construction industry. The disputes which occurred in the 1990s are still apparent in the current scenario. The ADR methods are also the same. Therefore, it is evident that disputes are inevitable, but the resolution methods have not yet improved. The study found inter-relationships among the disputes related to the Sri Lankan construction industry. In disputes resolution, adjudication and arbitration were identified as the contractual obligation of the parties to the contract. To increase the efficiency of adjudication and arbitration practices in the Sri Lankan construction industry, a framework was developed based on the primary and secondary data collected in this research. However, the study further explored that several attributes found in the literature cannot be achieved due to the adjudication and arbitration practices followed by the professionals in the Sri Lankan construction industry according to the SBD and Arbitration Act 11 of 1995 Sri Lanka.

1.8 Thesis Structure

As a navigation guide, this section will present the thesis structure as presented in table 1.1.

Table 1 - 1Thesis Structure

Chapter	Description
Chapter 1	The study aim, objectives and problem identification are presented here.
Chapter 2	Literature review is presented in relation to the Sri Lankan construction industry, causes of disputes and dispute categories in the global construction industry, and effect of disputes to the construction industry are discussed.
Chapter 3	Literature review is presented on litigation and ADR in the construction industry, attributes of ADR, and forms of contracts and links to the dispute resolution practices in the Sri Lankan construction industry are described.
Chapter 4	The methodology adopted in finding solutions to the research problem is included in this chapter.

Chapter 5	Data presented and discussed on the causes and categories of disputes in relation to the Sri Lankan construction industry and their inter-relationship here.
Chapter 6, 7	Data presented and discussed by linking the causes of disputes found in the previous chapter to the ADR practices in the Sri Lankan construction industry and the attributes of ADR practices in the Sri Lankan construction industry.
Chapter 8	Data presented and discussed on specific factors in relation to the successful ADR practice in the Sri Lankan construction industry.
Chapter 9, 10	Results presented in previous sections have been analysed and presented the developed the framework. Further, the recommendations are presented in relation to the successful implementation of the framework.

CHAPTER 2

2.0 Disputes in the Construction industry

2.1 Introduction

Knowing the existing literature on the study topic will enable us to be aware of the current knowledge about the topic, concepts and theories, applied research methods, controversies about the topic, clashes of evidence and the key contributors to the research area (Bryman, 2012). Therefore, Chapter 2 and 3 include the literature review of this study.

The structure and the relationship between the literature review chapters are displayed in Figure 2.1. Chapter 2 and 3 assimilated the existing literature and theories on the effect of dispute, dispute causes, litigation, ADR, attributes of ADR and the Sri Lankan construction industry to provide a comprehensive academic basis for a framework for improved ADR in the industry.

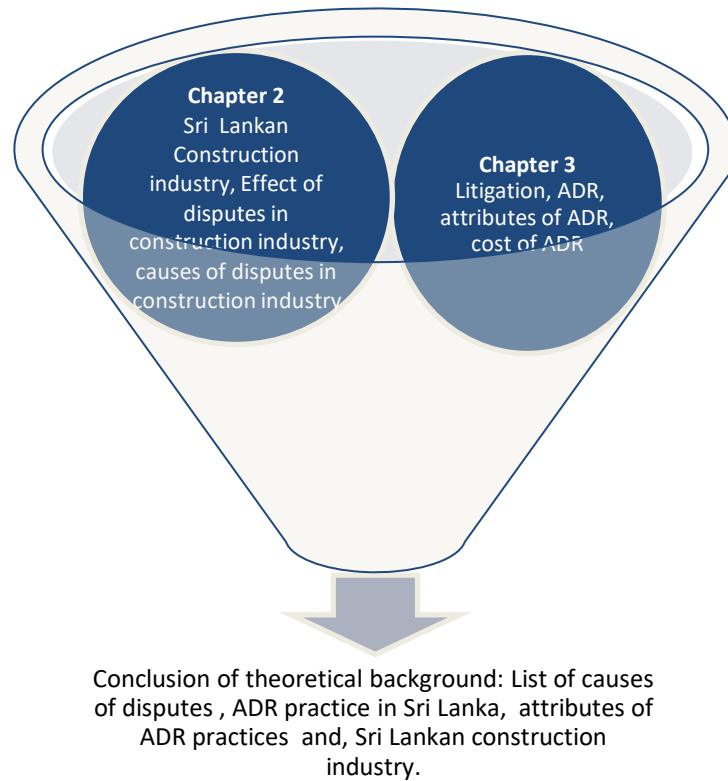


Figure 2 - 1 Structure of the Literature Chapter

2.2 Sri Lanka Construction Industry

Construction industry is one of the key contributors to the country's economy (Manoharan et al., 2023; Mashwama et al., 2017). Similarly, construction industry is one of the major sources of employment in the country (Silva, Warnakulasuriya, and Arachchige, 2018; Lewis, 2004). In addition to the direct employment with the professions and trades, the construction industry provides work for scientists of various backgrounds, analysts, financial institutions, equipment manufacturers, material suppliers, lawyers and government agencies (Rnskin and Estes, 1982). Further, industry professionals create infrastructure, housing, commercial and industrial facilities, and a wide range of public works (Stipanowich, 1998a). However, the vast development of the construction industry is due to the massive increase in the need for construction worldwide (Xu, Wang and, 2019; Abeynayake and Weddikkara, 2012).

The Sri Lankan construction industry contributes 7.1-8.0% of GDP to the country's economy by providing services, products and, 8.5% of employment in all industries in Sri Lanka (Central Bank of Sri Lanka, 2019). The Construction industry provides support for the functions of every

industry with infrastructure facilities and the structures to facilitate services, commerce and utilities (Wibowo, 2009). According to the Survey of the Sri Lankan construction industry, (2018) the total work done, and wages and salaries paid during the year 2018 for constructions were Rs.316.4 Billion and 34.8 Billion respectively. With that, it is evident that an efficient construction industry actively contributes to the development of the economy of Sri Lanka.

2.2.1 Construction Industry Development Authority

Construction Industry Development Authority (CIDA) is a public sector institution under the Ministry of Urban Development and Housing Sri Lanka, which provides the following services (Cida.gov.lk, 2022).

- Strategic leadership to the construction industry, by ensuring dynamic and professional industry services.
- Provides national construction policy, regulations, capacity building, development and the promotion of quality standards of the domestic construction industry for a sustainable national development.

CIDA was originally known as the Institute of Construction Training and Development (ICTAD), but it changed to the current name as CIDA in 2015. The Sri Lankan construction industry has its own standard form of contract developed and published by CIDA. Those standards are in several forms for different types of constructions as follows.

- Standard Bidding Document 1 (SBD 1) – Recommended for use for works contract up to Rs. 10 million.
- Standard Bidding Document 2 (SBD 2) – Recommended for use on works contracts between Rs. 10- 100 million. May be used for works of higher values, which are not of a complex nature.
- Standard Bidding Document 3 (SBD 3) – Recommended for use on works contracts over Rs. 100 million and for contracts of a lesser value, which are of a complex nature.
- Standard Bidding Document 4 (SBD 4) – Recommended for use on works contracts where the contractor is responsible for the design and construction of the works on specified approvals obtained from the employer.

The above forms are developed based on the FIDIC and World Bank Construction of Contracts (Dilshani and Disaratna, 2014). There are several advantages and disadvantages in using standards forms for construction contracts. The advantages are that the documents are more accurate due to periodical review and revision (Kumarasinghe, 2010), widely accepted (Clough and Sears, 1994), promote efficiencies of all parties (Bunni, 2005), parties become familiar with the content with the frequent usage (Ashworth, 1991), represent a degree of fairness in a contract between parties (Gayan, 2003), mitigate project risks (Senevirathne, 2005), and save time and money (Senevirathne, 2005). The disadvantages are that they may not fit all situations (Rajapakse, 2004), and alteration of clauses may cause problems (Kumarasinghe, 2010).

As stated in the above SBD forms, CIDA has been the agency to nominate adjudicators. CIDA set up a pool of construction adjudicators and introduced guidelines (Jayalath, 2019).

2.3 Effect of Disputes in Construction Industry

The construction industry is complex where various parties such as owners (both government and private companies), designers, contractors, suppliers, subcontractors and bankers are working together (Al-Humaidi, 2014). This can be a range from large multinational contractors to one-man bands (Coombes Davies, 2008). However, those different knowledge-based professionals work together only to achieve one or more goals in a certain period of time and then disperse after the construction (Abeynayake and Wedikkara, 2012a; Cakmak and Cakmak, 2014). Therefore, appropriate coordination is very important to achieve the set goals through the temporarily assembled multiple member organizations of many discrete groups where each is expecting to maximize its own benefits (Gamil and Rahman, 2017; Walker, 1997). Once trying to achieve the goals by different viewed parties there is a tendency to generate disagreements, which leads to disputes. Those disputes arising out of the contracts are often technically complex (Fadhlullah Ng et al., 2019).

There are multiple definitions for “dispute”. Originally “dispute” defines as, “a specific disagreement concerning a matter of fact, law or policy in which a claim or assertion of one

party is met with refusal, counter claim or denial by another” (Howlett, 2013). Corby, (2003) defined dispute from a person’s emotional angle where a person lost in a particular matter will lose patience. Cakmak and Cakmak, (2014) also defined dispute through a similar angle but in different phrases such as “Incompatible activities, which occur when the behaviour of one person is interfering with or obstructing the actions of another”. Those definitions indicate that disputes affect not only the mind but also the heart of the person.

Sambasivan et al., in 2017 concluded that dispute has become one of the main causes of delay in a construction project. The negative influence of disputes on the performance of construction projects has been addressed by organizations in several studies and highlighted its negative impacts such as delay, interruption, or suspension of the whole construction work (Lam and Chin, 2005; Rahim, 2010).

Further, unresolved issues which may develop into a dispute, is one of the most damaging relationship-destroying factors in construction contracting. Similarly, Awakul and Ogunlana, (2002) stated that, construction conflicts affect the interests of many stakeholders in connection with larger investments. This is due to the threat of profit reduction. Therefore, it is evident that disputes are one of the main factors which prevent the successful completion of a construction project (Cakmak and Cakmak, 2014). A successfully completed project can be defined as completed on time, within budget, according to the specifications, and to the stakeholders’ satisfaction (Gudiene et al., 2013; Gebrehiwet and Luo, 2017). Therefore, disputes in a construction project can be expected to damage the cost, money, time and relationships of the stakeholders.

2.4 Types and Causes of Disputes in Construction Industry

Constantino and Merchant, (1996) found that disputes occur whenever parties in a relationship have differing values, objectives, expectations or interests, or experience unsatisfactory interpersonal relations. Irlayıcı Çakmak, (2016) has the same definition for “conflicts”. Hence, the majority of the researchers use the terms “conflicts” and “disputes” interchangeably. Acharya and Lee in 2006 proposed a model to explain occurrence of disputes by clearing the confusion between conflicts and disputes.

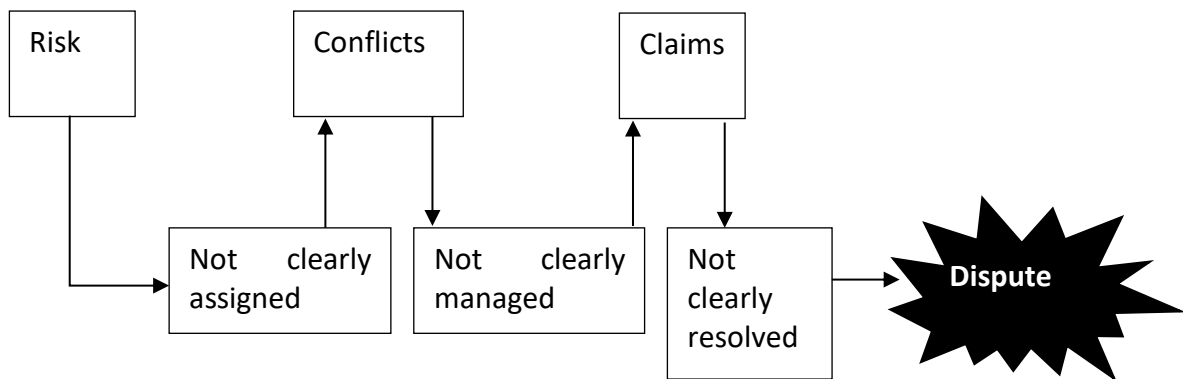


Figure 2 - 2 Risk, Conflict, Claim and dispute continuum model (Acharya and Lee, 2006)

The relationships between risk, conflict, claims and dispute are displayed in Figure 2.2. In practice the owner passes the risks of the project to the contractor through the clauses in the contract document and the contractor addresses these risks by including premiums, or covering them as a hidden cost (Jergeas, 2001). Failing to assign risks clearly is the reason for emerging conflicts as shown in Figure 2.2.

When a conflicting situation occurs, it is common that one party requests a claim as per the construction contract (Acharya et al., 2006; Powell-Smith and Stephenson, 1993). According to the Halki principle (Halki Shipping Corporation VS Sopex Oils Ltd -1998) a dispute does not exist until a claim has been submitted and rejected, a claim being a request for compensation for damages incurred by any party to the contract (Love et al., 2008). If these claims are poorly regulated with poor management, a conflict evolves into a dispute (Patil et al., 2019; Mitkus and Mitkus 2014). Hence, the above-mentioned theoretical definitions showcase that the main source of construction disputes is the formation of dissatisfaction among the contractual parties. However, once the dispute is crystallized the contracting parties need to find a mechanism to resolve the dispute according to the contract agreement (Cheung and Yiu, 2006). When conflicts are not well managed, they will escalate into disputes (Ekhatior, 2016). Not only construction researchers but also social science researchers have conducted many research studies on conflicts. Social science researchers believed that conflicts occur due to the “serious disagreement and argument about something important and also as a serious difference between two or more beliefs, ideas or interests” (Collins, 1995). In construction

projects, conflict is considered as an unexpected disruption to the project plan (De Vilbiss and Gilbert, 2005; Gardiner and Simmons, 1992; Rahim, 2002).

It gives a negative outcome once a conflicting situation arises in the project, although it is a natural part of interpersonal relationships (Kim and Leung, 2000; Roloff, 1987). According to the Latham report in 1994 dispute is identified as a reason for project failure. Due to the uncertainty, complexity and long-term transactions made, it is difficult to resolve every detail and foresee every contingency in the construction project (Designing buildings, 2018). This has led to the increase in the number of disputes in the last decade (Hong Kong International Arbitration Center). Therefore, identification of causations of the disputes in the construction industry and use of appropriate dispute resolution became a tool kit for managers and construction professionals (De Alwis et al., 2016).

It is obvious that disputes do not suddenly appear in a construction site but will occur when the stakeholders are not properly in control of the situation as indicated in Figure 2.2. Finally, failing to properly manage a dispute will badly affect the project on time, cost and the project environment (Kisi et al., 2020). Further, it can destroy relationships among the stakeholders that have been built up over a long period. Then the project might get unsuccessful, unfeasible or nullify any benefits. Therefore, disputes need to be avoided. If any dispute cannot be avoided then it should be resolved as efficiently as possible to manage the 'problem', negotiate a 'settlement', help 'preserve relationships' and maintain 'value for money' (Fenn, 2007). Hence, understanding the occurrence of disputes is important for proper dispute management in the construction industry.

Construction disputes could happen at any point during the design or construction phase of the project (Hall, 2002). According to Ume et al., (2014) construction disputes vary in nature, size and complexity.

There have been considerable studies undertaken to determine the causes of disputes in construction industry. Table 2.1 displays previous empirical work summarized by Kumaraswamy, (1997), Love et al., (2010) and the researcher in this study. When studying the table, it reveals that some of the causes of disputes (even though referred to using different words) are still the same in spite of the year and country. As an example, in the research

findings of Watts and Scrivener, (1992); Heath et al., 1994; Yiu and Cheung, (2004); Ashworth, (2005); Chan and Suen, (2005); Yiu and Cheung, (2007); Cakmak and Cakmak, (2014), Divakar and Kumar, (2015), and Viswanathan et al., (2020) “variation” is a common cause of disputes. However, Hewit, (1991) claimed change of scope as a cause of disputes in the construction industry which, is the definition of variation according to Ibrahim (2006). Similarly, extra work (Semple et al., 1994; Iyer et al., 2008), variation to scope (Waldron, 2006), excessive quantity variation (Acharya et al., 2006), changes (Dangrochiya et al., 2006; Assaf and Al-Hejji, 2006; Illankoon et al., 2019), unforeseen scope change (Love et al., 2011), change orders (Mahamid, 2016; Equbal and Banerjee, 2017), change in scope (Hameed Memom et al., 2014) were found as causes of disputes and explanations of “variation”. However, Perera et al., (2019) further discussed “variation” under two categories of disputes which were defined by Kumaraswamy, (1997). They are 16 root (underlying reason for the issue, which, if eliminated, will prevent disputes) and 23 proximity (immediately precedes and produces the effect) causes. The 16 root causes are Inadequate client brief/objectives, Slow response of the client, Inappropriate contract type, Late, incomplete and substandard information, Poor contract documentation, Differing site conditions, Design changes (Heath et al., 1994), Poor workmanship (Rhy Jones, 1994; Hameed Memom et al., 2014), Technology changes, Poor coordination, Design complexity (Hameed Memom et al., 2014), Change in economic conditions, Poor procurement process (Hameed Memom et al., 2014), Lack of strategic planning (Hameed Memom et al., 2014), Obstinacy of the owner (Hameed Memom et al., 2014), Unavailability of equipment. Although the above stated causes are defined as root causes by Perera et al., (2019) other cited researchers have not indicated any link to variation in their research studies. Therefore, some of the displayed causes in Table 2.1 can be linked to each other.

The construction disputes found in the literature are tabulated in Table 2.1 under two headings. Those are generic and specific causes of construction disputes. Under the Generic types, broader views of dispute causes were listed, while specific types are self-explanatory.

Table 2 - 1 Construction Disputes - Summery of Literature

Reference	Disputes
Generic coverage of Construction Disputes	
Gunarathna et al., (2018)	Four main disputing categories: payment issues, relationship conflicts, documentation-related conflicts and execution of work-related conflicts
Soni et al., (2017)	Owner Related, Contractor Related, Consultant Related, Third Party & Human Behaviour Related
Farooqui et al., (2014) ; Thobakgale et al., (2014)	Construction Related Causes of Disputes, Financial/Economic Causes of Disputes Management Related Causes of Disputes Contract Related Causes of Disputes
Zouher Al-Sibaie et al., (2014)	Internal conflicts social conflicts
Love et al., (2010)	Sours of disputes: project management, organization and people
Abdul Nabi and El-adaway , (2022)	(1) payment holds and delays, (2) lack of collaboration between various project trades, (3) delay inproject completion, and (4) poor communication between various project trades
References to Specific causes of Construction Disputes	
Viswanathan et al., (2020)	Ambiguous language of contract document, Opportunistic bahavior, Delayed response to decisions, Unrealistic client expectations, Technical incompetency of the stakeholders, non-availability of resources, poor communication between project participants, change order, variation in scope, stoppage/disturbance of work, poor productivity and control, delay in work progress, delay in payment, cost overrun
Kisi et al., (2020)	Changes, Site conditions, Delays
Illankoon et al., (2019)	Failure to properly administer the contract, Error and/or omissions in contract documents, Incomplete design information or Employer requirement, Failure to understand and/or comply with its contractual obligations by either party, Poorly managed construction process leading to shortage of resources and quality issues, Diverse interpretation of contract terms, Lack of interpersonal skills among professionals, Opportunistic behaviour of project parties, Lack of experience in construction practices and management, Lack of cooperation and trust among parties, Conflicting goals and objectives of project parties, Reluctance of project participants to deal with changes, Inadequate risk identification/allocation, External changes such as changes in market conditions and environmental regulations, External uncertain factors such as weather conditions or environmental regulations
Aryal and Dahal, (2018)	priority of goal/objective, change of site condition, personality conflicts, manpower resources, peoples' interruptions, input or instruction from leader, outside people interruptions, architect and engineers dissatisfied with the work, progress of the main contractor, communication barriers, lack of continuous improvement, cost estimates, opening for inspection, late delivery of materials by employer, communication breakdown and mistrusting each other
Maemura et al., (2018)	low levels of political support, low levels of international project management experience by the owner, low utilization of relational approaches, inadequate contract clarifications performed during the pre-contract period
Karthikeyan And Manikandan, (2017)	priority of goal/objective, change of site condition, personality conflicts, manpower resources, peoples' interruptions, input or instruction from leader, outside people interruptions, architect and engineers dissatisfied with the work progress of the main contractor, communication barriers, lack of continuous improvement, cost estimates, opening for inspection, late delivery of materials by employer, communication breakdown and mistrusting each other
Equbal and Banerjee, (2017)	Finance and payment issue, Time overrun, Cost overrun, Price escalation, Work change orders, Poor communication, Design errors, Inclement weather, Extra items, Unforeseen site condition, Poor work quality, Incomplete information in tender, Delay in issuing site, drawings, materials, Return of security deposit, Unfair allocation of risk, Delay in client's response, Mistakes in contract documents
Divakar, and Kumar, (2015)	unit prices: determination of a new unit price, scope of the unit price, revised unit price delays and extension of time: number of days behind programmed, claim of time extensions, liquidated damages contractual matters: scope of the contract, unclear contract terms, inadequate contract drafting variations: project revisions, changes in the work, unforeseen scope changes contract documents: differences between project design and contract documents, contradictory and error of information in the contract documents, plans and specifications that contain errors

	payments: failure of payment, payment of price difference, other: other disputes
İrılaiıcıÇakmak, (2016)	Unit prices, delays and extension of time, contractual matters, variations, contract documents, payments and other
Rauzana, (2016)	Owner: failure to respond to issues in a timely manner, lack of communication among the team members, the mechanism is not clear in providing information, poor management, control and coordination Consultant: Failure to determine responsibility in accordance with the contract, Estimation error, Delays in providing information, Design errors and specifications, Pictures and specifications are incomplete, Calculation of incorrect work progress, Lack of experience of consultants , Lack of contractor management, supervision, and coordination, Delay of jobs, Failure of plan and implement change of work, The failure to understand the price of the work or the offer price correctly, Lack of understanding of the existing agreement in the contract. Contracts and specifications: The lack of clarity of documenting the distribution of workflow, There is a confusing of terms in the contract documents, There are terms that can cause a double meaning in the contract documents, The big difference in understanding of contracts in foreign languages with the same contract and the Indonesian language.
Divakar and Kumar, (2015)	Sources of Disputes: 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. Causes of Disputes: Impact or effect of changes in respect of time and cost not properly addressed, Extension of time, Price escalation, Failure of payment as per condition of contract, Suspension of work, Defective work, contractor and employers risk, Tender evaluation, Work Quality, Reluctance to seek clarification financial stability
Cakmak and Cakmak, (2014)	Owner related - variations initiated by the owner, change of scope, late giving of possession, acceleration, unrealistic expectations, payment delays Contractor related - delays in work progress, time extensions, financial failure of the contractor, technical inadequacy of the contractor, tendering, quality of works Design related - design errors, inadequate / incomplete specifications, quality of design, availability of information Contract related - ambiguities in contract documents, different interpretations of the contract provisions, risk allocation, other contractual problems Human behavior related - adversarial / controversial culture, lack of communication, lack of team spirit Project related - site conditions, unforeseen changes External factors – weather, legal and economic factors, fragmented structure of the sector
Mitkus and Mitkus, (2014)	Unfair behaviour, Effects of psychological deficiencies
Tope Femi, (2014)	win-lose scenario, failing to share credit, questioning others' motives, disgruntled client, diverse perspectives, Arrogance, assumption
Hameed Memon et al., (2014)	Change of schedule, Change in scope, Owner's financial problems, Impediment to prompt decision-making process, Obstinate nature of the owner, Change in specifications by the owner, Change in design by the consultant, Conflicts between contract documents, Design complexity, Inadequate working drawing details, Change in specification by the consultant, Unavailability of equipment, Shortage of skilled manpower, Contractor's financial difficulties, Poor workmanship, Poor procurement process, Lack of strategic planning, Inadequate design.
Mahamid, (2016)	Micro level: Delay in progress payment by owner, Unrealistic contract duration, change orders, Poor quality of completed works, Labour inefficiencies Macro level – inadequate contractor's experience, Lack of communication between construction parties, Ineffective planning and scheduling of project by contractor, Cash problems during construction, Poor estimation practices

Safinia, (2014)	<p>General: Poor commendation among parties, propagation of type of contract and warranties.</p> <p>Clients: Lack of information and changes in the requirements and conditions of contracts. Intrusion of one party into another, and issuing late payments</p> <p>Consultants: Lack of experience, coordination, and design discrepancies</p> <p>Contractors: Deficient site managerial skills</p> <p>Subcontractors: Failure to follow agreed contract orders</p> <p>Suppliers: Lack of competence in performance and purpose</p>
Cheung and Pang, (2013)	Contractual and speculative. Contract incompleteness is the root cause of both types of construction dispute. In addition, the task factor and people factor underpin contractual and speculative disputes, respectively. These three factor groups are further elaborated into eight dispute factors: risk and uncertainty, collaborative conflict, ambiguity, deficiency, inconsistency, defectiveness, opportunistic behaviour, and affective conflict.
Ilter, (2012)	<p>Employers: contractor selection (experience and technical capability), avoiding variations and punctual instructions.</p> <p>Consultants: preparation of project documents.</p> <p>Contractors: project selection and approach to conflicts;</p> <p>Project managers: defining the project scope, punctual instructions and use of ADR methods.</p> <p>All stakeholders: project duration, unfamiliarity with local conditions, adversarial approach in handling conflicts and communication problems.</p>
Abeynayake and Wedikkara, (2012)	breaches of contracts by any party to the contract in Sri Lankan construction is inadequate administration of responsibilities by the client or contractor or sub-contractors, some plans and specifications that contain errors, omissions and ambiguities, Sudden tax and cost increase, Negligence and poor performance of the construction professionals
Jaffar et al., (2011)	<p>behavioural problems - poor communication among project team, multicultural team problem and reluctant to check for constructability, clarity and completeness of project.</p> <p>Contractual problem - delay interim payment from client, client fails to respond in timely manner, application of extension of time and improper project schedules.</p> <p>technical problems - contractor's quality of work, error of pricing or costing, late instructions from architect or engineer</p>
Love et al., (2010)	For clients the underlying latent conditions that resulted in a dispute were due to the nature of the task being performed (e.g., failure to detect and correct errors) and those arising from people deliberate practices (e.g., failure to oblige by contractual requirements). For the contractor focus group, the circumstances arising from the situation or environment the project was operating in were identified as the main underlying latent condition for disputes (e.g., unforeseen scope changes)
Cheung et al., (2010)	Design changes
Iyer et al., (2008)	time delay and extension - Delay due to handing over site, delay due to release of mobilization advance, delay due to late receipt/ checking of drawings, delay due to accidents, delay due to temporary stoppage, delay due to rework, delay due to extra work
Yiu and Cheung, (2007)	Significant sources: construction related (variations, delay), human behaviour related (expectations and inter parties' problems)
Assaf and Al-Hejji, (2006)	These causes were grouped into nine major areas: materials, manpower, equipment, financing, environment, changes, government relations, contractual relationships, and scheduling and controlling techniques. The following is a brief description of these factors that cause delay.
Dangrochiya et al., (2006)	<p>Factors contributing to disputes</p> <p>1). Errors in drawings 2). Defective specifications 3). Improper Contracting practices such as Contract familiarity/client contracting procedures 4). Bid development errors such as Estimating error 5). Payment and budget 6). Performance 7). Delay and time 8). Lack of Quality 9). Lack of Administration process 10). Misunderstandings between client, contractor, owner etc. 11). Unpredictability 12). Unrealistic expectations by parties 13). Ambiguous contract documents 14). Poor communications between project participants 15). Lack of team spirit 16). Failure of participants to deal promptly with changes 17). Unexpected outcomes 18). Bid review of contracting officers 19). Faulty negotiation procedure of contracting officers 20). Knowledge of local statutes of contracting officers 21). Scheduling of contracting officers 22). Change order of project management procedure 23). Pre-award design review of project management procedure 24). Pre-construction conference proceedings of management procedure 25). Quality assurance of project management procedure 26). Faulty Scheduling of site management process 27). Improper Project management procedures 28). Lack of quality control</p>

Acharya et al., (2006)	<p>public interruptions - compensation not paid or not enough, property expropriation, fear of displacement, not fulfill interest of community, project hampers health of people and damages the natural settings of flora and fauna, people seeking more benefit from the project, misbehaviour of project people,</p> <p>Changed site conditions - lack of knowledge of local conditions, superficial investigation of site condition, carelessness of investigator, lack of investment (money, time, experts) in site exploration, wrong interpretation of site investigation results, archeological (historical) site found, owner's decision to change site</p> <p>change order evaluation - tendency of high price claim, tendency of lower price offer, method not clear in contract provision</p> <p>Design errors - inexperience of designer, lack of knowledge of local condition, base data were wrong, wrong site exploration results, faulty assumptions, incompetent designer, low design fee, cheap designer hired instead of quality</p> <p>excessive quantity variation - change orders, scope change, design errors, drawing errors, misinterpretation of drawings double</p> <p>meaning of specification - complicated work, inexperience of specification writer, outdated standard, copy paste tendency, vested interest, negligence</p>
Cheung and Yiu, (2006)	Three root causes of disputes - conflict, contract provision, triggering events
Waldron, (2006)	Nine key causes in disputes: Variations to scope, Contract interpretation, Extension of time (EOT) claims, Site conditions, Late, incomplete, or substandard information, Obtaining approvals, Site access, Quality of design, Availability of resources
Chan and Suen, (2005)	Problem areas of dispute: payments, variations, extension of time, quality of works, project scope definition, risk allocation, technical specifications, management, unrealistic client expectations, availability of information, unclear contractual terms, unfamiliarity with local conditions, difference in way of doing things, poor communication, adversarial approach in handling conflicts, lack of team spirit, previous working relationships, lack of knowledge of local legal system, conflict of laws, jurisdictional problems
Ashworth, (2005)	Causes of disputes: general (contracts, communication, fragmented structure of the sector, tendering practices), employer (scope, variations, changes made in standard contracts, interventions to the PM, payment delays), consultants (design errors, inexperience, late/inadequate instructions, lack of coordination, inadequate responsibility descriptions), contractors (insufficient site management, inadequate planning, quality, problems with subcontractors, delay in paying subcontractors, insufficient coordination of subcontractors), subcontractors (failure to abide by contractual requirements, quality), suppliers (low performance products)
Adriaanse, (2005)	Causes of disputes: material/workmanship quality, delays, variations, cost increase, different interpretations of the contract provisions
Yiu and Cheung, (2004)	<p>Significant sources: Construction related: variation and delay in work progress</p> <p>Human behaviour of parties: expectations and inter-parties' problems</p>
Fryer et al., (2004)	Situations that are prone to disputes: inception/briefing/tendering, design, construction operations, project management
Killian, (2003)	<p>Project management procedure: change order, pre-award design review, pre-construction conference proceedings, and quality assurance</p> <p>Design errors: errors in drawings and defective specifications</p> <p>Contracting officer: knowledge of local statutes, faulty negotiation procedure, scheduling, bid review</p> <p>Contracting practices: contract familiarity/client contracting procedures</p> <p>Site management: scheduling, project management procedures, quality control, and financial packages</p> <p>Bid development errors: estimating error</p>
Jergeas, (2001)	Misunderstanding of Contract Intentions, Construction Related Causes of Dispute, Financial/Economical Causes of Disputes, Management Related Causes of Disputes, Contract Related Causes of Disputes,
Mitropoulos and Howell, (2001)	Factors that drive the development of a dispute: Project uncertainty, Contractual problems, Opportunistic behavior
Duran and Yates, (2000)	<p>1. Project uncertainty - uncertainty arising from pre-existing conditions, outside forces, and complexity</p> <p>2. Process problems - problems in the contracting process, including imperfect contracts, incomplete scope definition, unrealistic expectations about cost or the completion date, and poor performance in executing the work</p>

	3. People issues - issues and problems arising between people as a result of poor interpersonal skills, poor communication, lack of responsibility, and unethical or opportunistic behaviour.
Kumaraswamy, (1997)	Root - unfair risk allocation, unclear risk allocation, unrealistic time/cost /quality/ targets by clients, uncontrollable external events, adversarial (industry) culture, unrealistic tender pricing, inappropriate contract type, lack of competence of project participants, lack of professionalism of project participants, clients' lack of information or decisiveness, and unrealistic information expectations (contractor's) Proximity - inadequate brief, poor communications, personality clashes, vested interests, changes by client, slow client response, exaggerated claims, estimating errors, other errors, internal disputes, inadequate contract administration, inadequate contract documentation, inaccurate design information, incomplete tender information, inadequate design documentation, inappropriate contractor selection, inappropriate payment modalities and inappropriate contract form
Sykes, (1996)	Causes: misunderstanding, unpredictability
Conlin et al., (1996)	payment and budget; performance; delay and time; negligence; quality; and administration
Bristow and Vasilopoulous, (1995)	Five primary causes of claims: unrealistic expectations by parties; Ambiguous contract documents; poor communications between project participants; lack of team spirit; and Failure of participants to deal promptly with changes and unexpected outcomes
Semple et al., (1994)	Six common categories of dispute claims: Premium time, Equipment costs, Financing costs, Loss of revenue, Loss of productivity, Site overhead Four common causes of claims: acceleration- situations that involved attempts to mitigate delay by accelerating the schedule with the use of extra workers, overtime, and/or extended work weeks. Restricted access- situations where a particular work area or the entire site was not ready or available for work to progress. weather/cold- conditions where extreme weather or cold conditions affected the ability to do work Increase in scope- design changes, extra work, and errors. As a point of interest, the increase in scope of work was the main cause of dispute in approximately half of the claim reports analyzed.
Rhys Jones, (1994)	Ten factors in development of disputes: management; culture; communications; design; economics; tendering pressures; law; unrealistic expectations; contracts; and workmanship
Diekmann et al., (1994)	people -Issues involving people are extremely important when considering the number of organizations, relationships, roles, responsibilities, and the many different expectations that affect these people process - Process issues, or the manner in which the contract and building process is carried out, include planning of the project; financial and scope definition; contractual obligations, contractual risk allocation, and contract administration procedures; quality of the construction documents used; and the use of dispute mitigation techniques. project related - Project issues are those characteristics that define the technical nature of the work, such as the type and complexity of a project, the limitations of the site and the environment in which it is being proposed
Heath et al., (1994)	Five main categories of claims: EOT, Variations in quantities, Variations in specifications, Drawing changes, Others Seven main types of disputes: contract terms; payment; variations; time; nomination; re-nomination; and information
Watts and Scrivener, (1992)	Most frequent sources of claims: Variations, Negligence in tort, Delays
Hewit, (1991)	Six areas: change of scope; change conditions; delay; disruption; acceleration; and termination
Jahren and Dammeier, (1990)	Causes: Societal expectations, Nature of industry, Economic considerations, Low-bidder system, Too many attorneys:

There is a diversity of methodological approaches used by previous researchers on finding out the causes of disputes in the construction industry. Mostly they have used quantitative study

by counting the occurrence of dispute causes through questionnaire survey from industry specialists. Some of them have used real time case studies analyzing them the using qualitative method. However, when referring to Table 2.1 researchers have used different terminologies interchangeable such as causes, factors, areas, categories and types. Not only that, researchers have used different types of ways to categorise those construction disputes. Kumaraswamy, (1997) used two different categories such as root and proximity causes to divide dispute causes. Killian, (2003) used six categories such as project management procedure, design errors, contracting officer, contracting practices, site management, and bid development errors. Cakmak and Cakmak, (2014) categorized disputes such as owner related, contractor related, design related, contract related, human behavior related, project related, and external factors related. Rauzana, (2016) identified three categories such as owner, consultant, and contracts and specifications. El-Sayegh, (2020) claims that disputes in United Arab of Emirates can be categorized as design, owner, contractor, contractual, and other. Considering all those categories, the disputes were categorized in to eight different categories. They are owner related, contractor related, design related, contract related, human behaviour related, project related, external factors related, and consultant related.

Based on the type of contract, participants of the contract will be different. For the purpose of satisfying all the different types of contracts above categorization was done. In traditional contracts, owner, contractor and consultant will be there and design and built contracts owner and contractor will be the major participants. In that sense there are two different categories included in this research such as design related and consultant related disputes.

2.4.1 Owner related

The owner is responsible for defining the project scope (Diekmann and Girard, 1995). Once the owner has defined the scope, there cannot be any changes and he is responsible for the overall success of the project (Howard et al., 1997). Acharya et al., (2006) claimed that the owner is the main responsible person for most of the conflicting factors in construction. In the field, the owner of the project is recognized as the client and the employer. The disputes presented in the previous Table 2.1 were separated and listed under owner related disputes in Table 2.2.

Table 2 - 2 Owner Related Disputes

Owner Related Disputes	
<ul style="list-style-type: none"> • Variations initiated by the owner • Change of scope • Late giving of possession • Acceleration • unrealistic expectations • payment delays • Confusing requirements of owner • supremacy of owner 	<ul style="list-style-type: none"> • project scope definition not clear • site access delays • owner furnished equipment • lack of space in construction site • financial failure of owner • Owner's desire to reduce capital costs • Non-payment of project changes • Suspension of work

Definition and the reason for several causes of owner related disputes are discussed as follows.

Variations initiated by the owner- During the study in the Hong Kong construction industry, Kumaraswamy, (1997) found variations as the most frequent dispute causation factor. Variations occur due to the confusing requirements of the owner and unclear project scope (Acharya et al., 2006). In turn, the above will adversely affect the design, cost and quality. According to Viswanathan et al., (2020) variation creates delay in work progress which can leads to cost overrun. Further, Viswanathan claimed that non availability of resources and poor communication between project participants can lead to variation in scope.

Change of Scope - Scope changers arise because of inexperienced clients, their confusing requirements, stakeholder needs, physical location, and the prevailing economic environment (Love et al., 2009). Further, increases in scope change will lead to increases in project cost, time and disputes. When the parties cannot agree with the changes to the original scope of the work, disputes will occur (Yates, 2011). The research done by Semple et al., (1994) over a period of 3 months from 24 construction claims reports in western Canada, showed the increase in scope included design changes, extra work, and errors. Change of scope has a negative effect on project success (Mahamid, 2016).

Late giving of possession - Restricted accesses; referred to situations where a particular work area at a site or the entire work site was not ready or available for work to progress (Semple et al., 1994). Conditions of contract include information on the availability of the site for construction, either the full site or in parts/stages during progress of work (Iyer et al., 2008). These types of situations are common in road construction and refurbishment projects.

Acceleration - Unanticipated labour inefficiencies are the product of delays and resulting acceleration of the work (Mahamid, 2016). One of the most common causes experienced in western Canadian claims is acceleration (Semple et al., 1994). They tried accelerating the scheduled project plan by use of extra workers, overtime, and /or extended workweeks.

Unrealistic expectations - Construction disputes often arise due to the unrealistic expectations of the parties (Bristow and Vasilopoulos 1995).

Payment Delays - Based on the findings of interviews with 40 construction practitioners, Chan and Suen (2005) concluded payment delays are the most frequent dispute category. According to Deniz, (2012) payment is the second most frequent dispute category in Turkey. Sheridan (2003) also confirmed the same. Gunarathna et al., 2018 identified delayed payments and non-payment as the most common dispute causes in the Sri Lankan commercial building sector. To prevent this dispute cause, owners should pay progress payment on time and contractors should manage their financial resources and plan cash flow by utilizing progress payment (Mahamid, 2016). Availability of cash flow is very important for a contractor to run the business (Assaf and Al-Hejii, 2006).

2.4.2 Contractor related

Even though Acharya et al., (2006) claimed that the owner is the main responsible person for creating disputes where Cakmak and Cakmak, (2014) believes that contractor is the main guilty party in disputes in the construction industry. The researcher has identified contractor is the least responsible party for construction disputes. Contracted related disputes extracted from table 2.1 are listed in the table 2.3.

Table 2 - 3 Contractor Related Disputes

Contractor Related Disputes	
<ul style="list-style-type: none"> • Delays in work progress • time extensions • financial failure of the contractor • technical inadequacy of the contractor • tendering • quality of works • excessive change orders • Major defects in maintenance 	<ul style="list-style-type: none"> • Local people interruptions/protests • sub contractor's inefficiency • Non-payment to subcontractor • Mentality of contractor • Underestimation by contractors • Unit Prices • Inadequate planning

Several causes of dispute listed in table 2.3 are discussed as follows.

Unit Prices – Determination of the unit price by the contractor has been a frequently occurring dispute in infrastructure and superstructure works (Iyer and Bakioglu, 2018). For the purposes of obtaining the tender contractor tends to claim a lower unit price than the contractual unit price prepared by the owner which ultimately leads to many disputes (Wang and Yang, 2005).

Delays in work progress - Delay can damage the owner, because it potentially threatens the owner's anticipated revenue from the project (Mahamid, 2016). Delay can cause unexpected cost increase due to increased material and equipment costs, increased job site overhead expenses, and increased home office overhead expenses (Iyer et al., 2008).

Time extensions - Love et al., (2010) found from the client's project manager that the contractors do not seem to plan even for the smallest change. From the analysis done by Deniz, 2012 over a period of five months in 50 construction projects in Turkey each with over one million USD contract amount, the most frequent dispute category is the extension of time.

Financial failure of the contractor – Delays in payment and non-payment for changes by the owner have been discussed above. The results of those two disputes will create financial failure of the contractor (Friedman et al., 2000).

Technical inadequacy of the contractor - The interviews undertaken with the Australian client's group by Love et al., (2010) identified the prevailing skills shortage is a problematic issue for both the consultants and contractors. Inadequate contractor's experience is the top indirect cause of dispute. This will lead to project failure or severe cost overrun and delay

problems that negatively affect the relationship between the contractors and project owner (Bader and Assaf, 2004).

Tendering - Competitive tendering was identified as a dispute cause because price was deemed the primary selection factor for contractors (Love et al., 2010).

Quality of works - Chanka and Suen, (2005) discovered that the quality of work as a result of poor workmanship is one of the most frequent causes of disputes, (Ingham and Leek, 2017). Poor workmanship is a non-excusable delay (Iyer et al., 2008). Most rework is prompted by the bad workmanship or work not conforming to specifications (Iyer et al., 2008)

2.4.3 Design related

Many of the disputes involved issues that could have been avoided at the design stage (Ingham and Leek, 2017). The drawings form an important constituent of the contract document. The party who is delaying preparing the drawings needs to notify the other party about the delay (Iyer et al., 2008). Since there is a vast number of drawings prepared and maintained for a project, documentation errors are inevitable. Design related disputes extracted from Table 2.1 are listed in Table 2.4.

Table 2 - 4 Design Related Disputes

Design Related Disputes
<ul style="list-style-type: none">• Design errors• inadequate/incomplete specifications• quality of design• availability of information• Design changers

The following is a brief description of the disputes listed in Table 2.4.

Design errors - Love et al., (2010) identified, by interviewing the client's group in the construction project, that design errors could lay the foundation for opportunistic behaviour from the contractor to make a claim for something that they may have already taken into account during the tendering process. Under the documentation-related conflicts in Sri Lankan commercial construction industry, the most frequent conflict situation is design errors (Gunarathna et al., 2018).

Inadequate / incomplete specifications - Love et al., (2010) described the causes of disputes under the design documentation process, which evolved in an ad hoc manner, and as a result, it was often incomplete for the purposes of tendering. Inadequate/incomplete specifications are moderated dispute factors in both studies in China and Turkey (Chan and Suen, 2005). Another general conflict situation that can commonly be seen in the Sri Lankan commercial building industry is non-finalized designs (Gunarathna et al., 2018).

Quality of design - A lack of professionalism by design professionals will lead to rework (Love et al., 2009).

Availability of information - Incompleteness of information often stems from the relative frames of reference that the parties exhibit with regard to the scope and objectives of their respective work (Barman and Charoenngam, 2017). Contractual incompleteness has two definitional strands (Ayrest and Gertner 1992). Legal scholars proposed the term incomplete contracting to refer to obligations of the parties that are not specified to the fullest extent. Economic scholars use this term for contracts that fail to fully encompass the potential gains to be achieved from trade in all countries.

Design Changes - during the course of the project, many changes in the scope of work as well as difficulties in meeting required design specifications were witnessed, leading to excessive design changes and thus delays in completing drawings and plans (Abdul Nabi and El-adaway, 2022).

2.4.4 Contract related

Clegg, (1992) proposed that, from a sociologist's viewpoint, contracts themselves cause conflicts. Cheung and Pang, (2012) argued that contracts are the root cause of all types of construction disputes. However, a contract is a legally binding instrument that ensures the transaction of services and their associated monetary value as agreed between two parties. It states not only the obligations of the parties but also their shared risk (Barman and Charoenngam, 2017). Contracts are termed incomplete when they are ambiguous on obligations and responsibilities. They do not fully specify contingencies and risk-allocation (Cheung and Pang 2014). When such circumstances arise during a project, the parties might resort to dispute. Contract related disputes extracted from Table 2.1 are listed in Table 2.5.

Table 2 - 5 Contract Related Disputes

Contract related disputes	
<ul style="list-style-type: none"> • Ambiguities in contract documents • Different interpretations of the contract provisions • Risk allocation • Other contractual problems 	<ul style="list-style-type: none"> • Form of contract • Inadequate bid information • Scope of the contract • Multiple prime contracting parties • Cost overrun
<ul style="list-style-type: none"> • Change order negotiations • Interpretation of escalation/de-escalation 	

The following paragraphs discuss the several causes of disputes listed in Table 2.5.

Risk allocation –Risk allocation for the contractor by the owner is done through the contract agreement (Swiney, 2007). However, the unforeseen situations in the project will make disputes between the project participants in risk allocation (Fisk, 2000).

Cost overrun – As explained above risk allocation is done through the contract document and improper risk allocation will cause cost overrun (Lam et al. 2007). Therefore, cost overrun is categorized under contract related disputes. According to the six-level ISM hierarchy model developed by Viswanathan et al., (2020) cost overrun is at the top level. Viswanathan further claimed that cost overrun is the most damaging dispute than any other in the model. It is because all the other disputes related to the contract has high tendency to create cost overrun in the project.

Ambiguities in contract documents - Ambiguities in contract documents are more frequently occurring factors according to Kumaraswamy, (1997), where Chan and Suen, (2005) believe it is rare to find since standard forms are used. However, in the Korean construction industry different meanings in specifications has been identified as one of the prominent critical factors (Acharya, Dai Lee and Man Im, 2006). If the contractual conditions are not clarified and mutually agreed on in pre-bid meetings or before project commencement, there is a high likelihood that they will cause disagreements between the parties, leading to a dispute that ends in expensive litigation (Barman and Charoenngam, 2017). There are several other outcomes of the ambiguities in a contract document, in which the contract administrator won't be able to correctly apply the contract documents, such as conditions of contract,

specifications, drawings, bills of quantities, or any supplement that forms part of the contract (Musonda and Muya, 2011)

Different interpretations of the contract provisions - Fenn et al., (1997) argued that one of the top factors creating disputes in the construction industry is the standard form of construction contracts. These include disputes arising from misunderstanding and misinterpretation of contract conditions written in English, and difficult terms (Enshassi et al., 2009). Therefore, Chong and Zin (2009) suggest using plain English to avoid difficulties in interpretations. In the Sri Lankan construction industry, a common dispute related to different interpretations of the item descriptions in the BOQ and the relevant drawings (Gunarathna et al., 2018). One of the major resultant disputes due to different interpretations is suspension of work (Lai, Yik and Jones, 2004). According to Acharya et al., (2006) material specifications in the contract document showcase different interpretations which ultimately confuse the contractor.

Other contractual problems - Factors influencing the occurrence of erroneous contract documents were stated as design re-use, staff motivation, procedural requirements and time boxing (Love et al., 2009). Unclear scope definition is a moderate factor in both studies (Ilter, 2012). Contractual incompleteness and decision makers' limited rationality and opportunistic behaviour may combine to become the major cause of conflicts in construction (Barman and Charoenngam, 2017). Document related errors and defects in documents can also be considered as common disputes in the construction industry (Cakmak and Cakmak, (2014); Jaffar et al., (2011)). If the documents did not submitted on time this can cause delays in work progress in the Sri Lankan construction industry (Gunarathna et al., 2018). Therefore, the other contractual problems can be considered as errors in documents, delays in documents and defects in the contract document.

2.4.5 Human behavioural related

Changes in an individual's attitudes, disposition, and behaviour can adversely influence their decision-making capacity, relationships, and their ability to solve problems and negotiate (Love et al., 2009). The values that an individual possesses will largely depend upon their education, training, experience, judgment and ethics (Cakmak and Cakmak, 2014). Decision makers strive to be rational but are only partly so (Simon 1997). This limited rationality is an aspect of the

cognitive limitations of the human mind. It often renders decision makers incapable of anticipating all possible scenarios and so often leads to incomplete contracts and finally to disputes (Barman and Charoenngam, 2017)

Human behaviour related disputes extracted from Table 2.1 are listed under Table 2.6

Table 2 - 6 Human Behaviour Related Disputes

Human Behavior Related Disputes
<ul style="list-style-type: none">• Adversarial/controversial culture• Lack of communication• Lack of team spirit• Unfair behaviour• Effects of psychological deficiencies• Misunderstandings among participants

Several disputing factors listed on Table 2.6 are briefly discussed in the following sections.

Adversarial / controversial culture - The organizational system is the interface between the individual and the project and is the cultural setting of the individual's workplace (Love et al., 2009). An adversarial approach in handling conflicts is a moderate factor in both studies (Cakmak and Cakmak, 2014). Contract participants typically perceive each other as adversaries, and they are mostly concerned with preserving their own interests even at the expense of the other parties. This ingrained adversarial attitude greatly intensifies the atmosphere in the event of conflict (Barman and Charoenngam, 2017).

Lack of communication - Poor communication is a moderate factor in both studies (Ilter, 2012). Contractors indicated that proper communication channels between the various construction parties should be established during the early project stage (Mahamid, 2016). Any Problem with communication between construction parties may lead to severe misunderstanding and therefore delay in decision making, frequent design changes and rework (Al-Ghafly, 1995).

Lack of team spirit - Construction disputes often arise because of a lack of team spirit (Bristow and Vasilopoulos 1995). The absence of a team work culture in the industry and lack of a common purpose amongst stake holders have inhibited corrected efforts in driving for better overall performance of the industry as a whole (Hill and Wall, 2008).

2.4.6 Project Related Factors

Project related factors are the one of the least important dispute causes compared to other causes in the industry (Cakmak and cakmak, 2014). Disputes specific to the given construction project are listed under project related disputing factors in Table 2.7.

Table 2 - 7 Project Related Disputes

Project Related Disputes
<ul style="list-style-type: none">• Site conditions• Unforeseen changes• Complexity

Site conditions - A contract needs to provide additional compensation for differing site conditions (Epstein, 2004). Because, hidden conditions create the difference between a profitable contract and a financial disaster.

Unforeseen changes - When uncertainty is high, initial drawings and specifications will invariably change and the project team will have to solve problems as they arise during construction (Williamson, 1979). However, if the specific clauses in the contract agreement failed to take into account unforeseen events, this creates potential opportunities for unsuitable claims (Mitropoulos and Howell, 2001). The three key areas on uncertainty identified by Atkinson et al. (2006) are uncertainty associated with estimating, uncertainty associated with project parties, and uncertainty associated with project life. During the project life unforeseen changes which were unable to be detected can occur during the construction stage (Acharya et al., (2006); Levy, (2000)). Hence, unforeseen changes are inevitable in construction projects, but need to be resolved properly with a team effort.

2.4.7 External Factors

Causes of disputes which are not in the hand of the project participants or project documents are listed under external factors in Table 2.8.

Table 2 - 8 External Factors Related Disputes

External factors related disputes
<ul style="list-style-type: none"> • Weather • Legal and economic factors • Fragmented structure of the sector • Change in government codes • Labour disputes/union strikes • Market inflation • Public disorder • Third party delays • Act of God

Several causes of dispute in Table 2.8 are discussed as follows.

Weather – This category referred to conditions where extreme weather or cold conditions affected the ability to do the work (Semple et al., 1994). Ordinary and foreseeable weather conditions are categorized as non-excusable delays, where the affected party will not approve compensation or an extension of time (Iyer et al., 2008).

Legal and economic factors - A commonly identified risk for international construction projects is a host country's political uncertainty. There were nine political risk factors which caused an indirect impact on labour costs, material costs, overhead costs, and revenue (Ashley and Bonner, 1987).

Fragmented structure of the sector- The Sri Lankan construction industry has faced many disputes related to the diversity nature of the construction projects (Gunarathna et al., 2018). Those can be listed as people with different attitudes, agendas, social status, educational background and characteristics that will often generate conflicts. International construction projects are more vulnerable to disputes resulting from such factors as different contracts, cultural background, languages, and technical standards (Liu et al., 2019). This divergence of interest becomes even more evident by outlining the types of claims that could arise on a project like this one (Bates and Holt, 2011).

2.4.8 Consultant related

Causes of disputes in Table 2.1 which are related to the project consultant are listed in Table 2.9.

Table 2 - 9 Consultant Related Disputes

Consultant Related Disputes
<ul style="list-style-type: none">• Errors and Omissions in design• Excessive extra work• Differing site condition• Specification related• Defective design• Excessive quantity variations• Lack of knowledge• Delay in Drawings

2.5 Summary

While conducting the literature review on causes of disputes, the term 'causes' was used differently like factors, reasons, categories, issues by different scholars. Further, in some of the findings causes were differentiated into categories such as root and proximity and micro and macro. However, reviewing the literature in this research, eight different dispute categories were listed: owner related, contractor related, contract related, design related, consultant related, project related, human behaviour related and external factors related.

The literature used in this study was from 1990 to 2022. Through the literature it was discovered that the same type of disputes found in 1990s are still applicable in the world construction industry today.

In all the studies reviewed here, disputes are recognized as a major cause for the delay in construction projects and more studies were done in finding out the causes of disputes in the construction industry. The next chapter will look into the dispute resolution methods in the construction industry and ADR attributes.

CHAPTER 3

3.0 Dispute Resolution Methods

3.1 Introduction

In business, parties come across various types of disputes which they cannot resolve by themselves. Therefore, parties are willing to get the professional advice from a third party to resolve their disputes (O'Connor and Rutledge, 2014). In this chapter the dispute resolution methods used in the Sri Lankan construction industry will be discussed in detail. Dispute resolution methods also will be discussed separately as the litigation and alternative dispute resolution methods. Further, it will also discuss the attributes of ADR and their significance.

3.2 Dispute Resolution Methods in Sri Lankan Construction Industry

It is evident that the dispute causes mentioned in Chapter 2 can occur in any construction project. However, the efficient settling of those disputes will help to continue project progress, maintain healthy relationship among contracting parties and keep control of cost and time overruns. Thereby, investors will show interest in investing money for the construction projects which ultimately lead towards a country's economy (Iyer et al., 2008).

The conflict trends between western and traditional societies are listed in Table 3.1. The similarities and differences in each of those are based on the culture, historical dispute resolution forum and process, and third-party preference. It is evident that dispute resolution process used in Asian countries are more towards integrative process which demonstrate their cultural profile, collectivism and cooperation. Sri Lanka is an Asian country where, during ancient time disputes were resolved in "Gam Sabha" (village councils) (Herat, 1988). The essential feature of Gam Sabha is to resolve disputes amicably and maintain harmony in the village according to the Buddhist principles (Paliawadana, 2003). History shows Gam Sabha

functioning as a court where it receives complaints, summoning parties, hearing evidence and making decisions and as an informal dispute resolution forum prioritizing the group's need, not individuals' desires (Amerasinghe, 1999 and Davidheiser, 2006, 2007).

Table 3 - 1 Conflict Predispositions (Reade and McKenna, 2007)

Conflict predisposition	Countries	Cultural Profile	Historical dispute resolution forum and process	3rd party preference
Adversarial	Anglo-Saxon, Germanic	Low context Small power distance Individualism Competition	Courts Litigation Distributive process Rights-based orientation Focus on substantive issues Outcome serves individuals	Unknown to parties Unvested interest in situation Professional qualification
Consensual	Asian, African, Latin American	High context Large power distance Collectivism Cooperation	Village Councils Mediation, arbitration Integrative process Obligation-based orientation Focus on relationship issues Outcome serves community	Known to parties Vested interest in situation Status in the community

Figure 3.1 presents the Cross-cultural paradoxes of dispute resolution which vary from distributive to integrative process and adversarial to consensual predisposition. Quadrant A of figure 3.1 represents western societies which resolve disputes through litigation. However, the litigation process is identified as a high cost, lengthy process, and can involve relationship break-up and absence of privacy (Danuri et al., 2012). Therefore, western societies are moving away from litigation to mediation as an alternative (Rowe and Bendersky, 2003). The move towards quadrant B from A involved integrative dispute resolution processes. Quadrant C shows the traditional village councils like Gam Sabha in Sri Lanka. However, indigenous dispute resolution processes consistent with local culture have in many instances been largely displaced by Western legal systems through colonialism, occupation, or other modernization

efforts (Ben-Mensah, 2004; Merry, 1992; Nicholson, 1994). Similarly, in Sri Lanka the British legal system gradually reduced the use of Gam Sabha and established the Charter of Justice of 1833 to a unified court system throughout the Island (Tiruchivan, 1984). Although, it emphasized the individual rights in the courts' system due to the slow, cumbersome and complexity of the process, British administrators introduced the Community Mediation Boards Act of 1988 (McClintock, 1998). Nicholson, (1994) suggests that "their ineffectiveness may be in part a symptom of their inappropriateness to indigenous culture" and the movement from C to D shows it clearly in Figure 3.1.

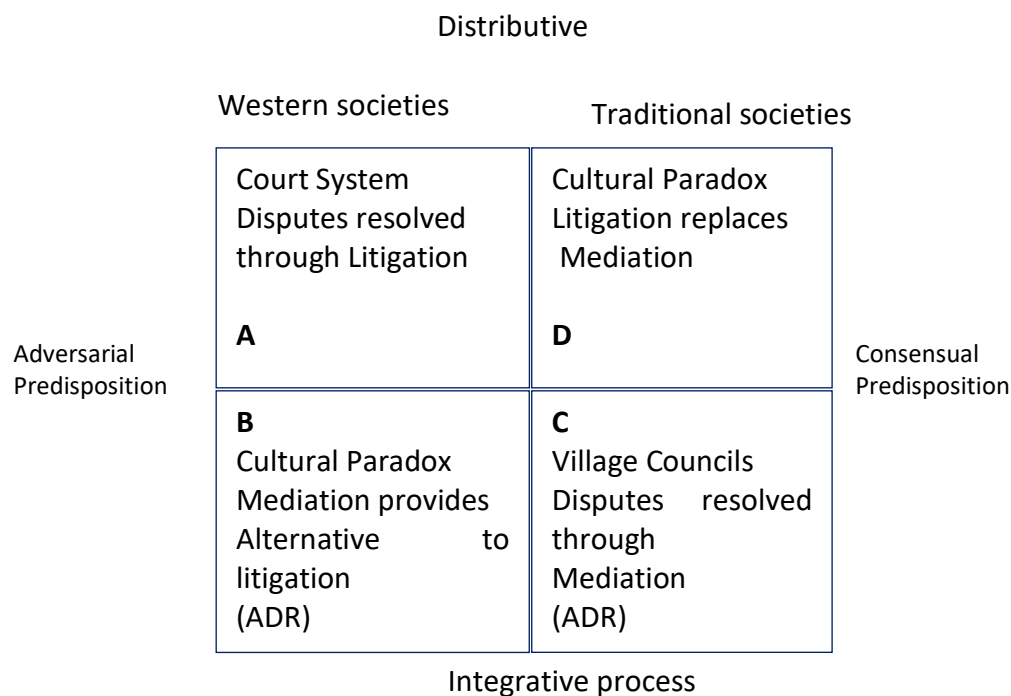


Figure 3 - 1 Cross-Culture paradoxes of dispute resolution (Reade and McKenna, 2007)

When looking at the other extreme end, there are situations where the law makes ADR mandatory in some jurisdictions. In the construction industry it is the contract agreement which defines the dispute resolution method. For instance, as per the FIDIC and SBD form of contracts used in Sri Lanka ADR is the dispute resolution method mentioned (Deffains et al., 2017). As argued by Shavell (1995), there are four significant differences between ADR and courts. The Court system has a formal structure and a procedure, information presented in courts is available for the public; less specialized and finally civil courts are the last option to resolve disputes when ADR is failing.

As suggested by Chan and Suen, (2005) frequently used dispute resolution methods in the construction industry are negotiation, arbitration, mediation, litigation, expert determination, adjudication, dispute resolution advisor, dispute review board, mini-trial and med-arb. Negotiation, conciliation, arbitration, mini-trial, and dispute review boards are applied in varies degrees in UAE construction industry as the dispute resolution methods (El-Sayegh, 2020). However, litigation or settlement in a court is found to be the least desired by all entities. Groton, (1992) proposed a stair-step chart for dispute resolution as shown in Figure 3.2. The steps begin with dispute prevention techniques and lead to high hostility and costly resolution methods. Irlayici Cakmak, (2016) mentioned that the litigation decision process is long, expensive and acrimonious. Figure 2.4 shows the cost variation based on the dispute resolution method. There litigation is the most expensive dispute resolution process where, negotiation is the cheapest one. All the other methods in between vary based on the complexity of the project.

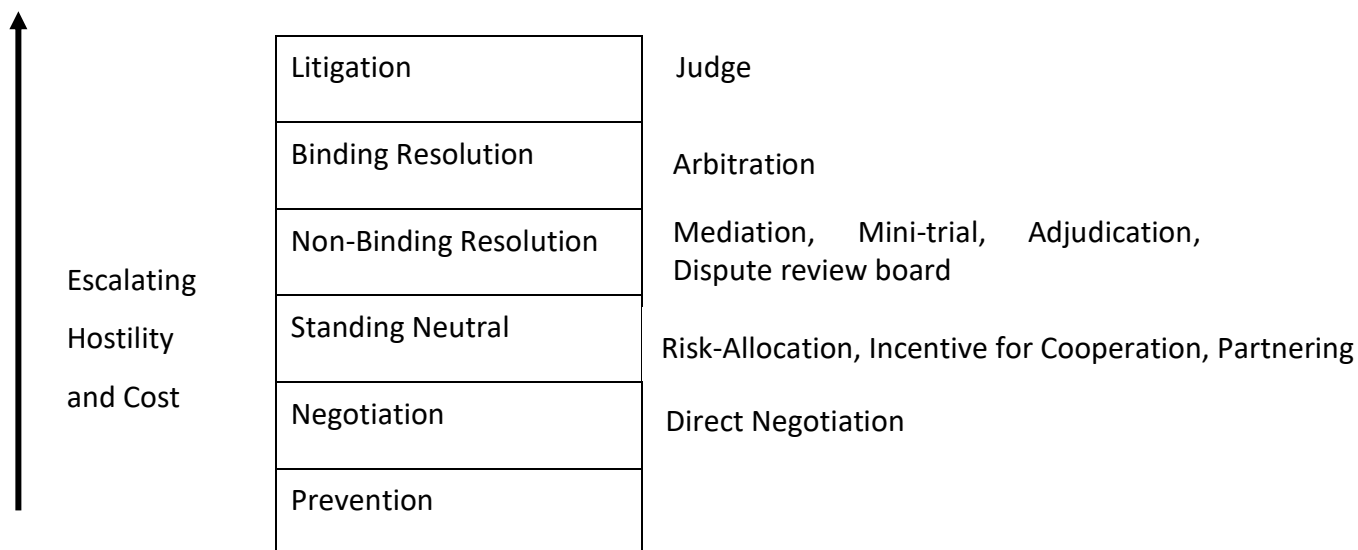


Figure 3 - 2 Cost variations of dispute resolution methods (Irlayici Cakmak, 2016)

Although there are several dispute resolution methods available, the most commonly practised dispute resolution methods in the Sri Lankan construction industry are litigation and alternative dispute resolution methods. Out of all the ADR methods, the Sri Lankan construction industry practises, negotiation, mediation, conciliation, adjudication and arbitration (Illankoon, (2022); Abeynayake and Weddikkara, (2007)). Therefore, litigation,

negotiation, mediation, conciliation, adjudication and arbitration will be discussed in detail in the coming sections.

3.2.1 Litigation

Litigation is defined as the court system to resolve disputes in a country (Carmichael, 2002). Litigation is a civil dispute resolution procedure that takes place in the district courts (Abenayake and Weddikara, 2013). In the Sri Lankan constitution original jurisdiction is exercised by primary courts, family courts, district courts and commercial high courts (Marsoof and Wigneswaran, 2008). There are also labour tribunals that deal with private sector employment related cases.

The court process starts of a “right to hearing method”, and then a judgment. In contracts when there is no provision for any dispute resolution method, litigation is the only option to resolve disputes. In submitting a legal argument to the courts, each party needs to find clear evidence, relevant legal information that can support the case and payments (Deffains et al., 2017). Whenever a contractual dispute is referred to litigation, courts rely on certain fixed rules for contract interpretations and construction contract case laws, statutes and doctrines (Thomas et al., 1994). Litigation utilizes a substantial amount of public resources and is financed through tax revenues (O’Connor and Rutledge, 2014). But it also results in high opportunity costs for the time of disputants, judge, court personnel and jurors and drains private resources (Marselli et al., 2013). Therefore, not only the parties like to go for private dispute resolution methods but also, some of the court personnel might prefer those cases be resolved elsewhere.

A formal dispute resolution procedure merely tries to find the proper solution, rather than facilitating the interests of disputants (Whitfield, 1994). In order to reach an agreement fair to all parties in an atmosphere of cooperation and mutual respect ADR is more suitable than the court system (Silver and Furlong, 2004). Strong encouragement to have ADR over litigation is the cost and unreasonable behaviour in litigation (Abenayake and Weddikara, 2013). However, stressfulness, inflexibility and formality of court processes, restricted scope of claims and remedies are other additional issues in using litigation as a dispute resolution method (Charu, 1992). Another issue in litigation is it open to the general public.

ADR is more popular than litigation due to the speed and cost effectiveness of the process (Hill and Wall, 2008). Many construction professionals believe ADR is a collaborative dispute resolution technique which is an effective tool to resolve construction disputes (Whitfield, 1994). Although significant dispute resolution mechanisms have evolved throughout the years, often a vast number of disputes end in the courtroom. If for some reason one party has taken the matter to court if the other party does not object, then parties will proceed to resolve the dispute through the court system (Ranasinghe, 2010). Though sometimes construction disputes are taken into court for settlement, the parties have to face the following issues (Abeynayake and Wedikkara, 2012a);

- Long drawn-out proceedings (lengthy hearing)
- Costs of litigation are far too high (high legal cost)
- Wastage of the client's managerial time
- Damaged commercial relationships
- Sometimes judgment that is impossible to enforce
- Use of deliberate delaying tactics by a defendant or respondent who knows how to play the system
- Parties must comply with formal rules of procedure or evidence for litigation
- Possible over simplification of complicated technical and legal issues.

Further, construction litigation involves complex technical issues, several parties and a large volume of documents (Fadhlullah Ng et al., 2019). Therefore, construction professionals prefer ADR over litigation in resolving construction disputes. Another reason to choose ADR over litigation is the total litigation cost is similar to two third of harm and the procedure make emotional damages (Polinsky and Shavell, 2012).

3.2.2 Alternative Dispute Resolution methods

Litigation is a binding dispute resolution method where ADR can be a non-binding or binding resolution method. Binding ADR is predominantly arbitration, the most widely used ADR

method in construction. Non-binding ADR methodologies include mediation, third-party neutrals, and mini-trials (Love, 2007).

Alternative dispute resolution (ADR) is a term usually used to refer to an informal dispute resolution process in which the parties meet with a professional third party (Hansen, 2019) who helps them to resolve their disputes in a way that is less formal and often more consensual than what is done in the courts (Abynayake and Weddikkara, 2012a). The out-of-court conflict management and dispute resolution mechanisms are arbitration, mediation, negotiation, village councils, fact-finding, partnering, dispute resolution boards, and other related dispute resolution processes (Nafees and Ayub, 2016). The description used for ADR by the Australian Federal Court and the Commonwealth Administrative Appeals Tribunal is “Assisted dispute resolution”. Undoubtedly the modern concept of ADR is known as a method developed to settle disputes speedily and amicably especially related to commercial practice or contracts in the construction industry (Larape & Joshi 2018). ADR is a dispute resolution process that encourages or facilitates the disputants to reach a solution to their disputes having appointed their own judges (Ranasinghe and Korale, 2011). Brooker and Lever (2010) further confirm that the most common reasons to prefer ADR methods are its efficiency in terms of speed and cost compared to litigation. Negotiation, Mediation, Adjudication and Arbitration are identified as widely used ADR methods (De Zylva, 2006). The discussion on arbitration in the literature seems to result in defining arbitration not as an ADR method but a quasi-judicial procedure because of its features closer to litigation in terms of duration, cost and the level of bureaucracy (EC Green Paper, 2002; Adriaanse, 2005; Carmichael, 2002). However, the frequently used alternative dispute resolution methods used in the construction industry are negotiation, conciliation, mediation, adjudication and arbitration (Abeynayake and Weddikkara, (2007) and Abenayake and Weddikara (2014a)).

Therefore, in this research the ADR methods discussed will be on negotiation, mediation, conciliation, adjudication and arbitration

3.2.2.1 Negotiation

Early settlement in construction disputes will prevent aggravation of the negative impacts on project performance (Chan and Suen, 2005). Although there are a number of possible

resolution methods, the disputes are always negotiated first before other methods are considered (Cheung et al., 2006; Tam, 1998; Yiu, 2011). Even in the Sri Lankan construction industry, negotiation is usually the initial attempt to resolve construction disputes (Jayasena and Yakupitiyage, 2012; Gunasena, 2010).

Negotiation is a bargaining process involving incremental adjustment of positions by the parties until agreement is reached (Colosi, et al., 1996). Further, it provides an opportunity for the parties to exchange promises and commitments to aid resolution of differences. According to Gould, (2004), negotiation is defined as a “process of working out an agreement by direct communication. It is voluntary and non-binding”. The success of the negotiation is dependent on how much parties are willing to compromise their needs (Hoogenboom and Dale, 2005) without the involvement of a third party (Gulliver, 1979). The negotiation process of submission and consideration will go on until an acceptable offer is made (Marzouk and Moamen, 2009). Compared with other ADR methods negotiation is considered as the most promising dispute resolution method due to its fast, efficient and simple process (Net Lawman Ltd. 2010). There are several factors that need to be considered before forming the negotiation team in the negotiation process. They are: who has authority to settle the dispute, who has access to the relevant information, which is likely to be attending from the opponent’s team, the influence of the prospective attendees on the key decision-maker, and the relationships between the individual members of both parties (Ren et al., 2011).

Throughout the negotiation process parties will do more discussions to find solutions to disputes and see the possibilities in managing disputes without escalating (Gunasena, 2010). The whole process is dependent on the trust and willingness of both parties to resolve the dispute without leaving the negotiation table until reaching an end or a solution to the dispute (Ren et al., 2002). If the parties fail to succeed in the negotiation the dispute will be referred to a costly, time-consuming proceeding like arbitration or litigation (Chow and Cheung, 2008). Not only the cost, but also to maintain reputation and avoid emotional stresses, it is better to avoid court proceedings (Cheung et al. 2002; Harmon 2003). Letham, 1999 identified important characteristics of a good negotiated settlement as fairness, efficiency, wisdom and stability (Abeynayake and Wedikkara, 2013). There are many negotiations happening at almost every stage of the construction contract to resolve disputes (Ranasinghe and Korale, (2011),

Dancaster, (2008)). With that Marzouk and Moamen in 2009 list the following attributes for negotiation;

- it prevents dispute(s) amongst project parties
- it keeps good relationships amongst the project's parties
- it provides flexibility and control in resolution

Before starting the face-to-face meetings, the negotiator should define the scope of the negotiation and clearly set up the expectations, highlighting the bottom line of the negotiation (Ren et al., 2011). Through case studies Ren et al., suggested several points to adhere to during the negotiation process. They are as follows;

- Getting the parties to the negotiating table.
- Without bargaining over positions should work towards the negotiating goals.
- Focus on Interests mainly by identifying shared and compatible interests
- Negotiation should not be affected by human behaviours like, perception, emotion and communication
- Innovative solutions for mutual gain
- Insist on Using Objective Criteria like: legal or business precedent, expert judgments, lab testing, efficiency, reciprocity, or standard conditions of contract
- Establish Best Alternative to a Negotiated Agreement
- Choose Appropriate Negotiation Tactics
- Reach a Settlement
- Limitations of Principled Negotiation
- Overemphasize Cooperation
- Assumption of Common Interests
- Culture Issues

Reaching a settlement through negotiation helps to maintain a harmonious relationship between the disputants (Ren et al., 2003). In fact, negotiation is the most cost-efficient method to resolve construction disputes, as it is informal, speedy, and non-complex in nature (Anderson and Galinsky 2006). Inefficient negotiation will lead to expensive arbitration or litigation (Ren et al., 2003). One of the reasons for such inefficiency is due to the lack of understanding the styles adopted during their own negotiation processes. Negotiating styles

are often framed by their conflict management style. In general, litigation or arbitration is not only very time-consuming and costly, but also potentially detrimental to the bilateral cooperative relationship (Lu and Nie, 2008). Therefore, negotiation plays an important role in resolving claims, preventing disputes, and keeping an amicable relationship between owners and contractors (Ren et al. 2003). Inevitably, almost all negotiations provide participants with opportunities either to take risks or to behave conservatively (Anderson and Galinsky 2006). In construction dispute negotiation, nobody can easily walk away from the negotiation for the following reasons (Ren et al., 2011):

Negotiation participants are legally bound by the project contract. Dispute negotiation is conducted within the scope of the project contract, and based on the facts, such as site events, instructions, and causes of claims.

Project teams are temporary multi-organizations. Each participant belongs to a different organization who could try to maximize his benefit by justifying his positions.

If the negotiation is terminated, negotiation parties have to seek solutions through other ADR means or the expensive litigation that both parties should avoid. For international projects, this also involves much more complex issues, such as different regulation and litigation systems.

The disputes arising from the contract document are suitable to resolve through negotiation (Yiu et al., 2008). According to economists, the negotiator's role consists of a utility-driven concept in order to facilitate the negotiation process (Bazerman and Chugh, 2006). Negotiation is the most informal process and thus allows the disputants to take control of the resolution process which offers a high degree of confidentiality (Chow and Cheung, 2008). Negotiation often starts with already discussed and argued matters before officially entering the process therefore it can discuss the same matter with the initial points not new points (Ren et al., 2011). This familiarity with the dispute by both the parties will help them to come to a positive solution, but if the claim is due to Engineer's mistake it will be difficult to come to a positive solution.

Negotiation has many unique challenges such as, the diversity of intellectual backgrounds; multi-issues involved; limited/biased information; prejudgment; different interpretations of contract documents, instructions, or site events; negative attitudes; and difficulty in reaching

concessions (Hu, 2006). Although there are many good things about the negotiation process, determination of the minimum acceptable amount of the claim value is the main problem for contractors (Marzouk and Moamen, 2009). Given the difficulties, dispute negotiation is often difficult, adversarial, and inefficient; and in the worst cases, leads to expensive arbitration and litigation (Hu, 2006).

Rahim and Bonoma (1979) differentiated the styles of handling interpersonal conflict in two basic dimensions: concern for self (degree to satisfy his or her own concerns) and concern for others (degree to which a person wants to satisfy the concerns of others). The two-dimensional model was refined and the integrated model encompasses the five conflict handling styles: integrating, obliging, compromising, dominating, and avoiding. This model is called the Dual Concern Model of handling interpersonal conflict (Rahim, 1992). Before, Rahim in 1992, Follett (1940) suggested five ways to handle disputes in the negotiation process by the negotiator of which four are similar to Rahim's. They are: domination, compromise, integration, and avoidance. The fifth one according to Follett in 1940 is suppression and according to Rahim in 1992 it is the obliging. It denotes that Rahim, (1992) gives much importance to the moral and legal binding of a person who is in negotiation than forcibly stopping their thoughts. The conceptual framework for the classification of the interpersonal conflict handling style of Blake and Mouton (1970) included five components two of which are similar approaches such as domination and comprise. Three other new styles added to that were withdrawing, smoothing and problem solving.

However, the above styles were taken in to challenge the research conducted by Cheung et al., 2006 through the interviews and questionnaires with the construction professionals, holding senior positions in Hong Kong. He found the use of obliging, dominating and avoiding styles are less influential in achieving functional negotiation outcome. Therefore, relying on the power position to control others, self-sacrifice, and withdrawal from conflict does not mean that the conflict can be resolved. Using these types of negotiating style may even result in conflict escalation and relationship deterioration. It is better to use the integrating style with problem solving, collaboration, cooperation, solution-orientation, win-win, or a positive-sum style. This is ultimately a high concern for self as well as the other party. In case-specific data collected using a questionnaire survey from construction practitioners and experts in mainland China, the results of factor analysis showed that the negotiating behaviours adopted by

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negotiators include four types, namely collaborating, avoiding, obliging, and dominating (Lu et al., 2015). It shows even after nearly a decade powerful party tries to win the negotiation by avoiding or forcing the other party during dispute negotiation.

Construction project managers seem to learn negotiating skills only through experience and observation (Smith 1992). When construction decision makers negotiate to resolve conflicts (particularly complex disputes), it is essential to first agree on the strategic decision (Yousefi et al. 2001) then start to negotiate the details.

The Sri Lankan construction stakeholders usually use negotiation as the basic conflict management style (Abeynayake & Weddickara, 2012). Further, this style is introduced as the compromising style in the dual concern theory. However, the term “compromising” is not used in the industry. According to Thalgodapitiya (2010), the conflict management is considered as a part of construction risk management in the Sri Lankan commercial building sector. It reveals that disputing parties are highly depending on the dispute resolution than the conflict management.

3.2.2.2 Mediation

Mediation is a voluntary non-binding process in which a neutral third party assists two or more disputing parties to come to an agreement as to how that dispute is to be settled (Morgerman, 2000). Mediation is one of the most widely used ADR methods in the construction industry; not only is it a flexible, cost-effective, and unprovocative way to resolve disputes but also allows disputes to be settled voluntarily and confidentially without being damaging to the business relationships or reputations (Cheeks, 2003). There will be a series of discussions between the disputants in order for the mediation process to succeed and the mediator should possess the qualities of integrity, reliability and competence (Boulle, 2001). Mediation is a process where the third-party neutral, acts as a facilitator to assist in resolving a dispute between two or more parties (Abeynayake and Wedikkara, 2013). According to Justice Lightman “the mediation process itself can and does often bring about a more sensible and more conciliatory attitude on the parts of the parties than might otherwise be expected to prevail before the mediation”. Justice Adams further claimed that mediation has the greatest impact on communication between the parties. This implies that the intention to use

mediation in resolving disputes is purely guided by the significant effect of attitude (self-perception) and perceived behavioural control (personal feelings) (Lee et al., 2020).

The third party facilitator who acts as the mediator will be assisting the communication between the two parties in arriving at their agreement. The mediator does not possess any power to make decisions as to the agreement or to issue judgments (Sarane and Gunathilaka, 2017). Therefore, the mediator's role is only to assist the productive continuation of the communication between the two parties. Further, the mediator can manage the flow of information and reduce the risks in communicating (Ifeanyi, 2000). The mediator should listen to the disputants without judgment on the dispute in such a way; acknowledging the parties' voices; suggesting possible alternatives in the manner in which the dispute is viewed by the parties; treating the parties respectfully; and leaving them in a better place economically, emotionally and psychologically (Harmon, 2006). Further, the mediator should create an informal atmosphere, to act as a go-between helping the disputants to agreement through improvement of communication, identification and clarification of the real, underlying issues, lowering tensions, identifying the parties concerns to adopt a mutually acceptable solution. The aim is to achieve a "win-win" situation.

The major task of the mediator is to encourage the disputing parties into rethinking and modifying their positions (Madden, 2001). Therefore, mediators need to realize the importance of using trust-building tactics in the course of the mediation process to address any long-held and deep-seated concerns among the disputing parties (Blackstock, 2001). The main goal of mediators generally is to have the disputants reach an agreement; yet, many have another important goal, which is to guide the disputants in achieving a mutually satisfying solution to their joint problem (Zubek et al., 1992).

According to Picker, (2002) there are two different types of mediators. They are Integrative (expand the pie) and distributive (divide the pie). Further, he claimed that an effective mediator can challenge a position or argument without offering an opinion on the merits. Chapman (2003) argued that mediation was the root of ADR and must be the first alternative of any dispute resolution process, whereas the traditional methods of resolving disputes, such as litigation and arbitration, relied entirely on the determination of a third party, and both have

higher costs and increased hostilities among parties. Experienced mediators are able to achieve outcomes beyond the scope of the court and lawyers (Brooker, 2008).

Today, in Sri Lanka, mediation has become a pressured choice upon parties to a dispute (Alexander, 2002). Even though Sri Lanka has a history of mediation, which runs back to the times of ancient kingdoms where adults and monks acted as mediators and carried out community mediation at village councils, mediation was legally introduced to Sri Lanka in 1988 by the enactment of the mediation boards Act (Brooker, 2008). According to section 10 of the aforesaid Act, the mediation boards have a duty to attempt to bring the disputants to an amicable settlement by all lawful means and to remove, with their consent and wherever practicable, the real cause of grievance between them. The Construction Industry Development Authority motivates mediation activities by instructing the construction contracting parties to forward their disputes to the adjudicator for mediation (Abeynayake and Wedikkara, 2013). However, construction professionals in Sri Lanka did not agree with that because it misleads the concept of adjudication.

As a solution to the increasing number of commercial disputes, mediation has become an alternative dispute resolution mechanism exercised mainly through the Commercial Mediation Centre Sri Lanka (Sarane and Gunathilaka, 2017). It was established in 2000 by the enactment of the Commercial Mediation Centre of Sri Lanka Act No.44. As per section 3 of the Act the functions of this Centre include; promoting the wider acceptance of mediation in the resolution of commercial disputes, encouraging parties to use mediation as a means of resolving commercial disputes and conducting mediation (Gessate no.1216-10-2001, 2000). In 2003, the government enacted another law on mediation enabling the Minister to appoint special mediation boards to resolve special categories of disputes (Hobbs, 2007). Under this Act, the government introduced Post Tsunami mediation boards in 2005 by Gazette Extraordinary No. 1397/12 dated June 15, 2005 with a view to utilizing mediation as a means of resolving Tsunami related disputes. Then the government enacted special land mediation boards under the same Act by Gazette Extraordinary No. 1901/8 dated February 10, 2015 and Gazette Extraordinary No. 1904/41 dated March 4, 2015. These boards are established in the Districts of Jaffna, Kilinochchi, Trincomalee, Batticaloa and Anuradhapura in order to settle the disputes relating to ownership or possession of land. Even though the mediation Acts were being enacted, there is no particular mediation Act for the Sri Lankan construction industry.

There are several advantages in mediation. There are no winners or losers in mediation. Therefore, it makes the parties able to understand the strengths and weaknesses of the case and make them to come to the best solution (Hobbs, 2007). But there are a few disadvantages as well. Some of the disputes cannot be resolved through mediation. They are recovery of property, money and criminal matters (Sarane and Gunathilaka, 2017).

However, CIDA in Sri Lanka tries to encourage construction contractors to resolve their disputes initially through mediation. The standard forms of contract prepared by them do not include “mediation” in the “Dispute Resolution” clause as a way to resolve disputes (Standard Bidding Documents from CIDA). Therefore, if the parties are willing to go for mediation it will become a voluntary process which is not mentioned in the contract.

Mediation is not always a good dispute resolution technique (Perera, 2019). Mediators have no authority to resolve disputes or to make decisions that are binding on the parties. Their roles are limited to clarifying, educating and serving as a facilitator of communication (Silberman, 1997).

3.2.2.3 Conciliation

Like mediation, conciliation involves third party intervention but requires a more active participation of the conciliator in generating solutions (Ifeanyi, 2000). In mediation a neutral and independent person assists the disputing parties to reach a mutually acceptable solution, where the conciliator makes his own formal recommendations for a settlement which may be either accepted or used as a basis for the parties to further negotiate and reach a settlement (Ranasinghe, 2010). The conciliation process is confidential and the documents prepared during the process are without prejudice and cannot be referred to or used in any subsequent proceedings (Ramsbotham et al., 2011). In particular, the content of any recommendation made by a conciliator must not be made known to any arbitrator or judge (Hill and Wall, 2008).

Conciliation is used more frequently than litigation to keep the peace and harmony between the parties (Redfern and Hunter 1986; Katz 1986). In the Sri Lankan construction industry conciliation is as popular as mediation (Ranasinghe, 2010). Ranasinghe further explains that various institutions have sets of rules for the conciliation process. For instance, ICC, UNCITRAL and a number of American arbitration associations have laid down rules for conciliation or

mediation, but they leave the procedural aspects to the mediator or conciliator. ICC conciliation rules states the conciliator shall conduct the conciliation process as they think fit. Even conciliation does not have statutory status; most of the standard forms of contract do not have conciliation as the mandatory ADR method (Owens, 2008). Further if conciliation fails, although the dispute will be referred to the next ADR, the conciliation proceedings cannot be used for any other ADR or litigation processes unless both parties agree. Owens, (2008) further argued that the cost of conciliation is similar to adjudication and parties are liable for their own costs and jointly responsible for the conciliation cost. It will take 3 to 4 days to complete one conciliation process and if parties cannot agree to a satisfactory resolution within the given time, the conciliator will give a recommendation. The success rate of conciliation is 50%.

Conciliation comprises activities designed to bringing parties to the table, typically at a bargaining impasse; these include information sharing, deliberation and persuasion (Ibsen, 2019). The role of the third party is to facilitate linkages and information sharing, bringing objectivity into the conflict and potentially suggesting solutions or making settlements (Walton and McKersie, 1965).

3.2.2.4 Adjudication

The popular Latham, (1994) report suggested that ADR is one of the most appropriate mechanisms to settle disputes and adjudication is the rapid and relatively inexpensive process in all cases. Adjudication is a system by which disputes are referred to the neutral third party, for a decision which is binding on the parties only until the dispute is finally resolved by arbitration or litigation (Abeynayake and Wedikkara, (2013a), Abeynayake and Wedikkara, (2013b)). Adjudication is a process of pronouncing judgment or making an official decision about who is right in a disagreement between two groups or two organizations (Ranasinghe and Korale, 2011). Adjudication came from the Latin word “Adjudicare” that brings the meaning of “to award judicially” (Sahab, and Ismail, 2011). Adjudication is an activity carried out by a person who judges and construction adjudication is not only the activity of judging or decision making but also carrying out the procedures before reaching a decision. Further the process will be completed within 28 days (Teo, 2008). ICTAD SBD/02 defines if the referred disputes are about a larger sum disputing parties can refer those to dispute adjudication boards. As stated earlier, the introduction was to assist cash flow as it is the lifeblood of the

construction industry (Sahab, and Ismail, 2011). According to the CIDA conditions of contracts, any dispute should refer to the adjudication as the first step in dispute resolution. The International Federation of Consulting Engineers (FIDIC) condition of contract 1999 Dispute Adjudication Board (DAB) has introduced adjudication as a pre-arbitration requirement. However, statutory adjudication has been created in England by the Housing Grants, Construction and Regeneration Act 1996, which came into force on 1st of May 1998 and it was included firstly in New Civil Engineering contracts as well as JCT (Joint contracts tribunal) conditions of contract (Abeynayake and Wedikkara, 2013a). Apart from that, in Sri Lanka the adjudication practice proceeds according to CIDA and FIDIC conditions of contract.

The following are the powers of the Adjudicator in Sri Lanka; (Abeynayake and Wedikkara, 2013a).

- Establish the procedure to be applied in deciding a dispute, within the procedural rule laid down.
- Decide upon the adjudicator's own jurisdiction, and the scope of any dispute referred to it
- Take the initiative and ascertain the facts and matters required for a decision.
- Make use of their own specialist knowledge
- Decide upon the payment of interest in accordance with the contract
- Decide to grant provisional relief such as interim or conservatory measures.
- Open up review and revise any opinion, instruction, determination, certificate or valuation of the engineer related to the dispute.

According to FIDIC 1999 edition, Engineer is appointed by the employer and expected to resolve disputes arising from the contract. Since the engineer is appointed by the employer, the engineer's impartiality is doubtful in the contract. Therefore, adjudicators have to be appointed to act as an independent person to resolve disputes as per the condition of contract. However, in earlier editions of FIDIC only arbitration was included and later on adjudication was introduced as a dispute resolution method (Ranasinghe and Korale, 2011). The significance of an adjudicator or the Dispute Adjudication Board (DAB) is that they should act as impartial experts and not as arbitrators. According to ICTAD conditions of contract, the adjudicator is a single person appointed by agreement between the parties. If the parties are unable to reach

the agreement within 14 days, the adjudicator would be appointed by ICTAD. It is essential that the adjudicator must only be a person suitably qualified to interpret technical and contractual matters.

The adjudicator's decision is temporarily binding until the decision is referred to arbitration or litigation (Sahab and Ismail, 2011). A major advantage in adjudication is it will enable the contract to continue without any interruption and the party disagreeing with the adjudicator's decision could resort to arbitration or litigation at a future date (Ranasinghe and Korale, 2011).

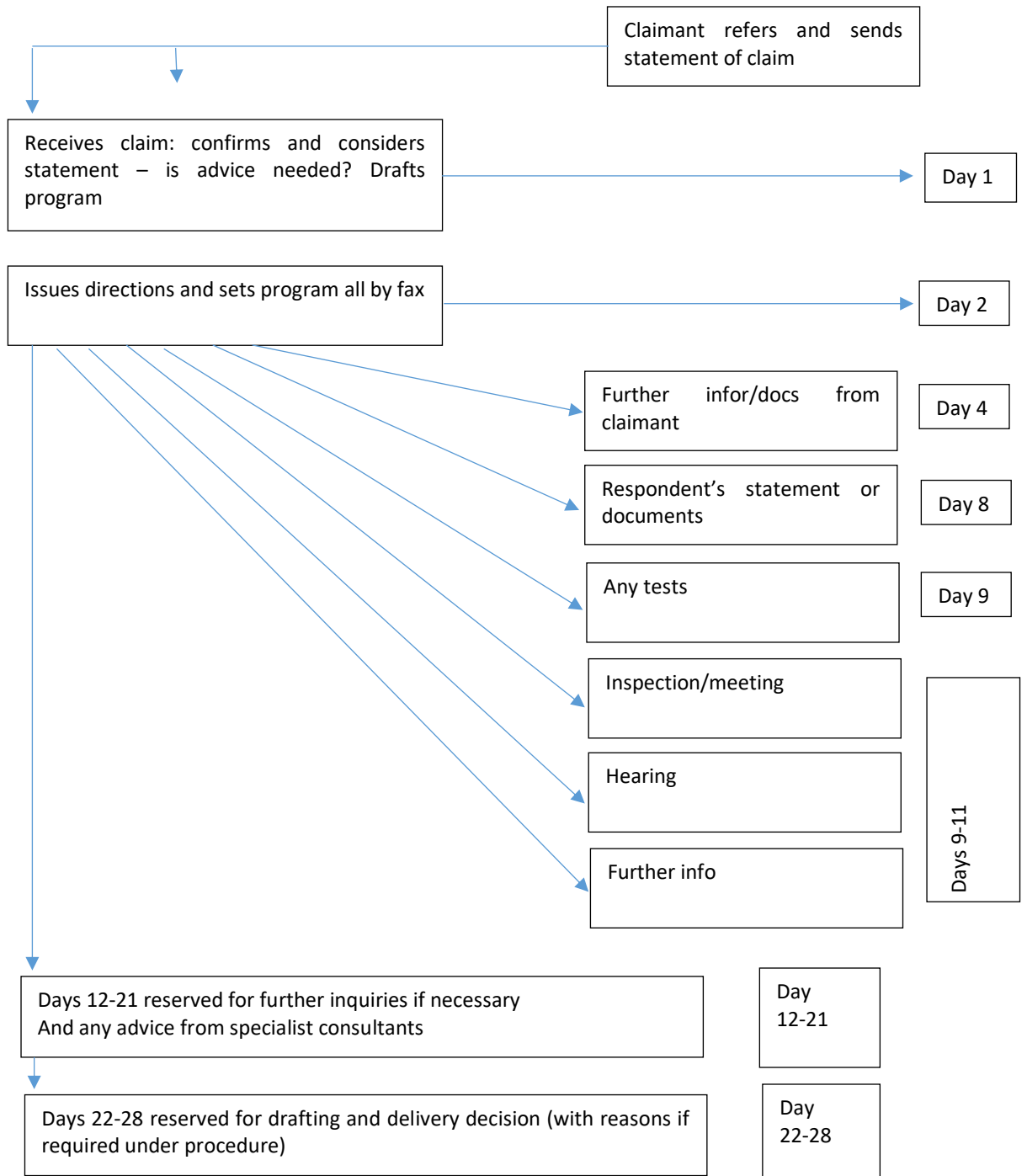


Figure 3 - 3 Adjudication Document flow and typical program (Ranasinghe and Korale, 2011)

Figure 3.3 displays the adjudication document flow and typical program which was introduced by CIDA and it was included as a dispute resolution method in the first revised edition of SBD in the 2007 Standard Bidding Document (Abeynayake and Wedikkara, 2013a). In the CIDA conditions the adjudicator shall be a single person (sole adjudicator) appointed by agreement between the parties. If parties are unable to reach agreement within 14 days, the adjudicator shall be appointed by CIDA. Either party may initiate the reference of the dispute to the adjudicator by giving 7 days, notice to the other party. Then the adjudicator shall give his determination about the dispute within 28 days or such other period agreed by the parties on receipt of such notification of a dispute. However, the adjudication, according to FIDIC, once a dispute is referred for an adjudication decision, is to be given within 84 days or such other time as is proposed by the Dispute Adjudication Board (DAB) and approved by the parties. The decision is to be reasoned and, as with other forms of adjudication is binding until resolved by one of the other methods of dispute resolution provided for in the condition. If either party is dissatisfied with the decision, or the DAB does not deliver its decision within the specified time limit, it may give notice of dissatisfaction to the other party within 28 days after receiving the decision or after specified time limit, and the dispute will be referred to another stage. According to the FIDIC conditions if either party does not refer the dispute to the arbitration within the specified time period, the adjudicator's decision become final and binding upon the employer and the contractor.

Adjudication is not popular in Sri Lanka due to the non-availability of the governing international convention and non-availability of statute locally (Abeynayake and Weddikkara, 2013). However, the adjudication process in Sri Lanka is called "Contractual Adjudication" which is mentioned in the conditions of contract.

The enforceability of the adjudicator's decision differs with the contractual and statutory adjudication (Dancaster, 2008). Therefore, depending on the terms of the contract, a decision given by the adjudicator is temporarily binding on parties until such time as the dispute is finally determined by arbitration, litigation, or agreement, whichever is applicable for the contract (Entwistle, 2010). Once either party has submitted a notice of dissatisfaction with adjudicator's decision, the other party will refer the dispute to the next level of ADR most likely to arbitration (SBD, FIDIC). However, parties may attempt to reach an amicable settlement prior to commencement of arbitration (De Zylva, 2006). If no notice of dissatisfaction is served,

the decision becomes final and binding on the parties (FIDIC, 1999). Although the contractual entitlement for the adjudicator's decision is given in the contract with the consent of parties, in case of a breach of contract, it takes a long time to resolve a dispute and recover money owed through litigation or arbitration (Chan 2006). According to Hattingh and Maritz, (2013) for the adjudication to have its potential impact, it needs to be compulsory through legislation, which would enhance the application of adjudication in the construction industry. Moreover, an effective statutory adjudication system requires not only payment and adjudication provisions but also a court system that is ready and willing to enforce the adjudicator's decisions (Gaitskell, 2007).

The majority of experts highlighted that in the present context, adjudication is practised as a condition precedent to arbitration in most of the contracts in the Sri Lankan construction industry (De Zylva, 2006). Another common opinion was that "adjudication is a suitable method of dispute resolution in terms of both cost and time." However, in the present context, parties are not in a position to take advantage of adjudication (Abeynayake and Wedikkara, 2013a). The reasons for such failure are:

- Inability to understand the dispute at its proper stage, which prevents disputes from being referred to adjudication;
- Failure to appoint adjudicators within the stipulated time period as per the contract;
- Lack of awareness about duties and responsibilities of adjudicators; and
- Less enforceability of the adjudicator's decision.

Jayasinghe and Ramachandra, (2016) claimed that there are several reasons for adjudication practice in Sri Lanka to be less effective than expected. Those reasons and the suggestions to improve Sri Lankan adjudication practice are listed in table 3.2.

Table 3 - 2 Sri Lankan Adjudication Practice - Reason for ineffectiveness and suggestions to improve those (Jayasinghe and Ramachandra, 2016)

Reasons for ineffectiveness	Suggestions to improve
Ineffectiveness and less enforceability of the adjudicator's decision	Enactment of legal assent through parliament to enforce the adjudicator's decision.
Lack of awareness among parties regarding adjudication	Increased awareness of parties regarding the adjudication process. Make people more culturally able to accept the adjudicator's decision and improve skills and competencies of adjudicators
Lack of competent adjudicators to handle complex disputes	Code of ethics for adjudicators needs to be published by a legalized entity. Conduct separate educational programs, regularized adjudication fees, segregation of nature of disputes referred to adjudication, maintaining a database of the decisions of adjudicators without the details of the parties relating to the previous cases while maintaining the confidentiality, and maintaining geographical dispersion of adjudication panels.
Inadequate training conducted in Sri Lanka to train adjudicators and improve their skills and competencies	Establishment of a legal entity to provide facilities and train adjudicators

In addition to the above, Danaster, (2008) states that another major reason for ineffectiveness is the cost of adjudication. He further confirmed that cost increases when the time taken to resolve the dispute increases.

However, some of the disputes are not suitable to resolve through adjudication (Ranasinghe and Korale, 2011) such as;

- Disputes which comprise several issues. These may need to be considered as separate disputes with separate adjudication or as requiring a service for decisions over an extended period.
- Disputes involving complex legal issues

- Disputes which required a decision, the consequences of which cannot be reversed, such as a matter of termination, alleged corruption or allegations against a professional person.
- Matters on which the decision is within the province of some other person or authority, such as Value Added Tax (VAT), taxation issues, health and safety, or any allegation with criminal implications must be referred to the proper authority.

3.2.2.5 Arbitration

Previous studies mostly defined “arbitration” as a legal technique for the resolution of disputes outside the courts, where parties to a dispute refer it to the arbitrator. According to Sir Edward Coke, disputes were settled through arbitration in 15th century England. However, the arbitration procedure flows in a similar way to court proceeding where each case is resolved, after reviewing the evidence and arguments (Spurin, 2003), by an individual or panel of arbitrators (Abeynayake and Weddikkara, 2012; Sims et al., 2003). “Party Autonomy” is the most significant term which gives right to the parties to select the arbitration procedures to follow, place of arbitration and the arbitrator or arbitration panel (UNCITRAL, 2008). Mostly attorneys, business persons and those with expertise in the relevant disputing area were appointed as the arbitrator or members of the arbitration panel (American Arbitration Association). It is the only available alternative dispute resolution method which gives a binding award (Hansen, 2019). Today, many of the disputes resulting from international trade relations are settled by referring to arbitration (Marsellie et al., 2013). As such, arbitration is also a commonly used method to resolve construction disputes in Sri Lanka (Abeynayake and Weddikkara, 2013).

The British formally introduced Arbitration to the Sri Lankan legal system in the 19th Century by enacting two statutes; The Arbitration Ordinance no: 15 of 1866 and The Civil Procedure Code of 1889 (Abeynayake and Wedikkara, 2012a). However, both the statutes were replaced by the Arbitration Act No.11 of 1995 Sri Lanka, which was inspired by the Swedish Arbitration Act and UNCITRAL model law ((Asouzu and Raghavan, 2000). By enacting the Arbitration Act on 30th June 1995 in the Sri Lankan parliament, Sri Lanka became the first country in South Asia to enact an Arbitration Law (Abeynayake and Wedikkara, 2012b). According to the new Act if

the dispute agrees with the arbitration agreement and does not contrary to public policy can be determined by Arbitration Law (Abeynayake and Weddikkara, 2012a).

The Arbitration Act No.11 of 1995 Sri Lanka applies not only to domestic arbitration proceedings but also international commercial arbitration with a foreign government, a company incorporated in another country or a citizen of another country (Marsoof, 2006). The use of the Arbitration Act of Sri Lanka widened after the signing of the New York Convention, which enables countries to recognize and enforce foreign arbitral awards (Abeynayake and Weddikkara, 2012a).

Arbitration contract or arbitration clause can be defined as an Arbitration agreement (Nevisandeh, 2016). Further, it emphasises that if the arbitration agreement is terminated, the arbiter cannot conduct the arbitration. According to the form of contract used, rules and arbitration procedure will vary. As an example, in the arbitration agreement of ICTAD the conditions of contract award should be made within 4 months whereas in FIDIC the conditions of contracts award should be made within 154 days (Abeynayake and Weddikkara, 2012). But according to the Sri Lankan Arbitration Act 11 of 1995 parties can decide on timelines. The Arbitration Act no.11 of 1995 states that arbitration agreement shall be in writing as a single document or in an exchange of letters, telexes, telegrams or other means of telecommunication. However, in construction contracts most of the arbitration agreements are in a set format based on the form of contracts such as Standard Bidding Document (SBD), FIDI, JCT (Kang-Ishwaran, 2006) 2012).

Researchers have identified many advantages of using arbitration as an alternative dispute resolution method over the country's court system on commercial disputes. This is exemplified in the work undertaken by Colledge et al., (2000) showing arbitration as less expensive, less formal, adaptation of industry experts as arbitrators, parties having the control over the process, more amenable, faster proceedings and enforceability of international awards due to the rights given after signing the New York Convention. Since the commercial sector is multijurisdictional, O'Connor and Rutledge, (2014) proposed arbitration as the best option to resolve disputes in business. With that the distrust within the parties about the different court proceedings can be avoided. "Party Autonomy" which is described as the freedom to choose the most suitable judicial procedure, freedom to choose meeting dates, time, proceedings and

place, freedom to choose arbitrators is another advantage of arbitration (Tanielian, 2013, Al-Humaidi 2014 and BANI 2017,). Nafees and Ayub, 2016 show that, according to the Arbitration Act of Sri Lanka, parties can appoint foreign arbitrators for the arbitration panel.

Although, there are many advantages of arbitration as an alternative dispute resolution procedure, while it is being practised in the construction industry, due to the lack of understanding of the parties to arbitration, many weaknesses became apparent (Hansen, 2019). This has been seen in the case of settlement claims in Egyptian large scale construction where most arbitration awards were not issued in a timely manner, and arbitration is not always a timely and effective method of settling construction disputes (El-adaway et al., 2009). Similarly, Nafees and Ayub, (2016) argue that, due to the presence of retired judges as arbitrators in most of the arbitration panels, proceedings have become similar to court proceedings where taking evidence from a single witness can taken years. This will affect the main reason to have arbitration as a dispute resolution method in commercial activities where parties should seriously think of appointing suitable arbitrators for the relevant case. The Sri Lankan Arbitration Act no 11 of 1995 does not provide time limits for an arbitration award which leads to the inefficiency of arbitration. However, article 210(1) of the United Arab Emirates Civil Procedure Code provides that the award shall be given within 6 months from the date that arbitral award is made (Dimitrakopoulos, 2001). Another discouraging point in arbitration proceedings is that sittings are of short duration and may be numerous. The parties have to pay for every sitting (Iswaran, 2007). This is actually similar to the payment made for lawyers appearing in the courts. The parties willing to express dissatisfaction over the order of the tribunal may inform the arbitral tribunal of this concern and, if such application is not successful, they may appeal to the High Court within 30 days of receipt of the decision (Arbitration Act No 11 of 1995, Sri Lanka). Parties can get help from ICLP in advance of appointment of arbitrators for any dispute. Further, incorporating article 24 of the International Court of Arbitration of the International Chamber of Commerce into current legislation can avoid delay and the final award will have to be made within 6 months (Nafees and Ayub, 2016). In the Malaysian construction industry, arbitration has in recent years, been increasingly perceived as inadequate and unsatisfactory by users especially in respect of cost and time taken to resolve the disputes (Fadhlullah Ng et al., 2019). Arbitration is claimed to be a time-consuming dispute resolution method because the process normally takes longer to be

resolved, similar to litigation which leads to the approach of using fast track arbitration (AIAC, 2018) When the third parties are adversely affected, the powerful party in the adhesion contract context uses arbitration as a mechanism to deprive a weaker party of the ability to vindicate his or her rights (O'Hara, E.A. and Ribstein, L.E., 2009. The Law Market. Oxford University Press, Oxford.)

In 2006 the survey conducted by Cairo Regional Center for International Commercial Arbitration (CRCICA) showed that the cost of arbitration which includes arbitrators' and administration fees is 3.8% of the original contract price and 3.6% of the actual contract value. Since construction disputes are taking place as civil proceedings before national courts, the cost for one hearing is minimal compared to the cost incurred in arbitration proceedings (Perera, 2019). In arbitration, the parties should bear the cost of arbitrators, the arbitral institution (if any) and administrative facilities, in addition to other common legal costs, where in a civil proceeding most of those costs are borne by the state. Therefore, in arbitration, to be an economical dispute resolution procedure, cases should be completed with minimal hearings without dragging on for a long time.

Most Arbitration awards in Sri Lanka are challenged by the parties at commercial high court. Eg: Mahaweli Authority of Sri Lanka vs United Agency Construction (Pvt) Ltd. (SL Law report 2002). In Southern Group Civil construction (Pvt)Ltd vs Ocean Lanka(Pvt)Ltd (SL Law report 2002). A survey carried out involving practitioners in Sri Lanka Arbitration put the ADR method in 4th place (Abeynayake and Weddikkara, 2012). Justice Saleem Marsoof (2006), suggested arbitration can be improved by changing the attitudes of the parties. High involvement of lawyers is the most common issue in Arbitration in Sri Lanka, with less concentration on the technical issues of the matter; delays in the solution or remedy; The same procedure applying for all disputes; cost of the Arbitration and other facilities; and weak arbitral tribunals, similar to court procedure (Abeynayake and Weddikkara, 2012). Sometimes the award is dragged out for long periods, and the award is based on those unfruitful hearings. In construction disputes, there are inherent characteristics which were recognized by the act and by leading arbitrators in Sri Lanka. Though parties have great autonomy to control procedures and select arbitrators, in practice they do not use this opportunity to select arbitrators, and to increase the effectiveness of the arbitration. In Sri Lanka the arbitration process has become very

adversarial and expensive, and the serious criticisms against arbitration in Sri Lanka, is the time factor (Abeynayake and Weddikkara, 2012).

Justice Saleem Marsoof (2006) suggested arbitration can be improved by changing the attitudes of the parties. Abeynayake and Weddikkara, (2012) suggested the following to improve the arbitration practice in Sri Lanka,

- Adopting qualified arbitrators – This should be done by considering the nature of the dispute.
- Change the attitude of professionals – should improve the professional awareness of the Arbitration and other ADR practices.
- Conducting awareness program
- Involvement of expertise from construction industry as arbitrators – professionals need to know about the procedures and be involved in this more
- Introduce recommended arbitration clause and agreement – Qualified arbitrators and professionals should draft the agreements or clauses
- Introduce construction industry arbitration rules – Make model arbitration rules and guidelines for the parties and arbitrators to the construction industry.

In order to enhance development of the modern commercial arbitration culture in Sri Lanka, the Institute of the Development of Commercial Law and Practice (ICLP) established an institution under the name of “ICLP Arbitration Centre” in collaboration with the business community in Sri Lanka and with the financial and technical assistance of the Government of Sweden. The ICLP Arbitration Centre engaged in promotional activities in educating the business community, the legal profession and the judges entrusted with commercial litigation on the modern domestic and global arbitration principles. Negotiation of international contracts, maritime arbitration and mediation of commercial disputes are subject matter for discussion in the ICLP Arbitration Centre (Nafees and Ayub, 2016).

Fast track arbitration was first introduced by the newly named Asian International Arbitration Centre (AIAC) previously known as the Kuala Lumpur Regional Centre for Arbitration (KLRC) in the year 2010, and revised in 2012. It was designed for parties who wish to obtain an award in the fastest way with minimal costs. The rules provide that arbitration (with a substantive oral hearing) must be completed within a maximum of 160 days and tried before a sole

arbitrator unless parties prefer a large panel (AIAC, 2018). (Towards sustainable dispute resolution: A framework to enhance the application of fast-track arbitration in the Malaysian construction industry).

There are several institutions that do fast track arbitration. Table 3.3 shows the institutions and the time allocated to give the award to the disputant parties. As per the table all the arbitration centres mentioned should complete the case within six months.

Table 3 - 3 Institutions with fast-track arbitration (Guney, 2018)

Institution			Time duration
International Chamber of Commerce (ICC)			Award should be six months
The German Institute of Arbitration (DIS)			Cannot exceed six months from the statement of claim or nine months in case of three member tribunal
Stockholm Chamber of Commerce (SCC)			Six months from the case transmission to arbitration

There are many institutions, including banks that are proposing to remove the arbitration clauses from their regulation agreement (Perera, 2019). This happens mainly due to the drawbacks in arbitration such as delay in process, high cost of the arbitrators and other facilities, higher involvement of lawyers, less concentration on technical issues, unawareness, different resolutions given by different arbitrators, difficulty in challenging the award, inability to conduct multi party disputes using arbitration and limited jurisdictions, same procedure applying for all disputes, impossibility of maintaining the relationship between parties and less satisfaction with the process (Abenayake and Weddikara, 2013).

3.3 Attributes of Alternative Dispute Resolution Methods

Escalation in cost, delays and adversarial nature of court procedure have encouraged the rapid growth of alternative dispute resolution methods in the construction industry. As discussed in the above sections the Sri Lankan construction industry also practises the ADR methods in resolving construction disputes. However, with the literature discussed so far it is evident that the speedy and economical resolution introduced to construction industry as ADR is getting away from the original intent of the ADR methods.

In that sense, this section has dealt with the attributes of ADR displaying the research findings of different scholars. Analyzing comprehensive literature Cheung et al., (2002) came up with 19 attributes of ADR arranged under four main attributes. Lee et al., (2016) suggested several factors which influence the selection and use of ADR which also can be categorized under the main and sub attributes listed by Cheung et al., (2002). Similarly, in the matter of understanding the behaviour and selector factors of dispute resolution in the Malaysian construction industry Chong and Mohamad Zin, (2012) suggested seven latent factors which are also categorized under the main and sub attributes of Cheung et al., (2002). Considering all the above, the following Figure 3.4 displays the attributes of ADR which are considered in this research.

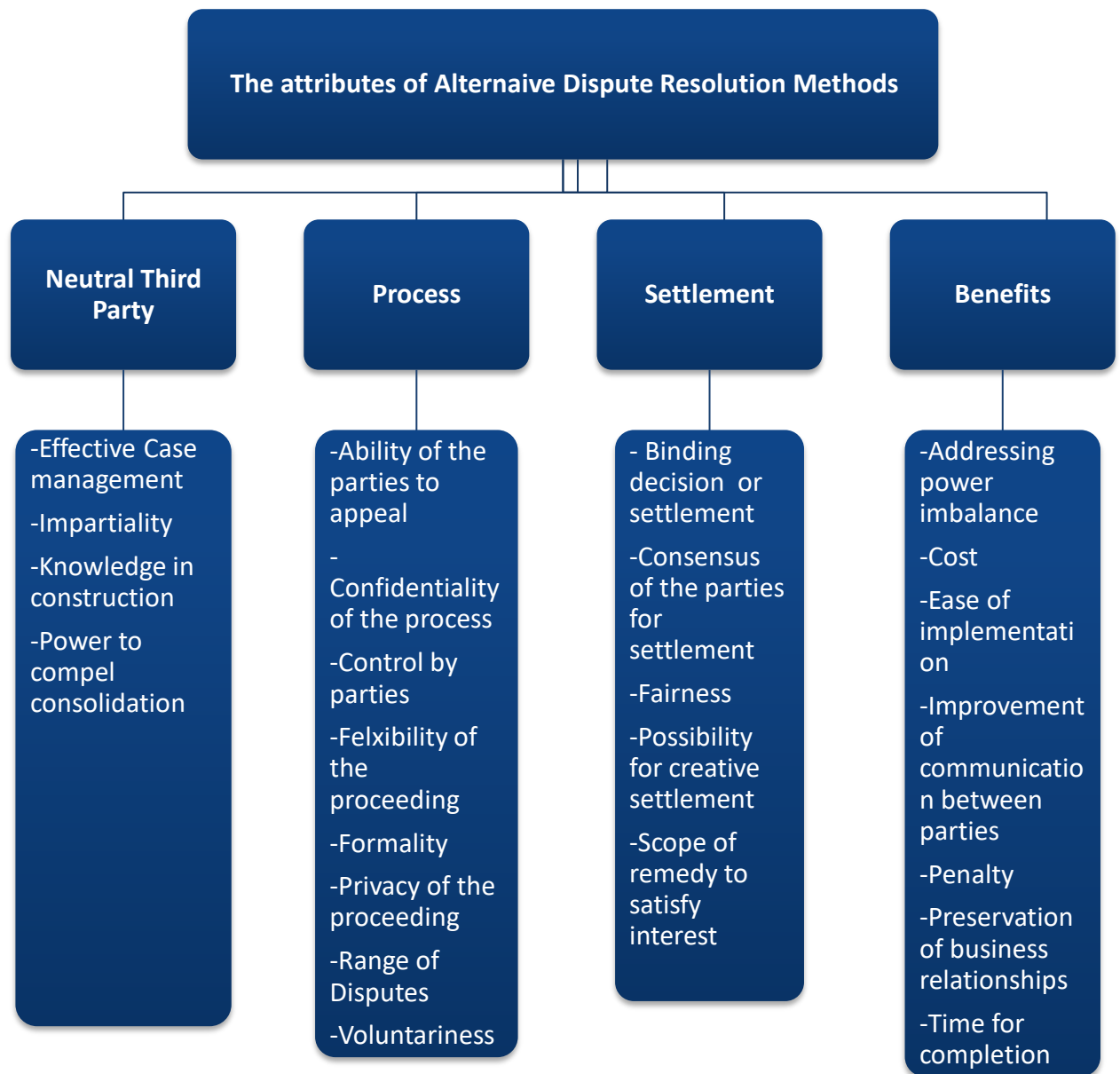


Figure 3 - 4 Hierarchical Structure of Attributes of ADR (Literature outcome)

The descriptions given by scholars on several main and sub attributes are discussed below.

Neutral Third Party –

- **Effective Case management** - It is also part of the responsibilities of the neutrals to educate their clients about the perceived benefits of ADR, such as being less expensive, confidential, voluntary, capable of more remedies, maintaining relationships, and so on (Cheung et al., 2002)

- Impartiality – This heavily depends on the competence, training, and integrity of the neutral third parties (Cheung et al., 2002). During the resolution process, a neutral third party owes a duty of care to his or her clients to remain impartial.
- Knowledge of construction - Legal professionals are generalists and may lack construction expertise and technical details. Continuing professional development in the construction sector (Cheung et al., 2002).
- Power to compel consolidation – consolidation means the act or process of uniting several pending arbitrations into one hearing before the same panel of arbitration (Schwartz, 1990). Although the parties may not necessarily be the same, they can find the same or similar subject matter, common questions of law and fact, and substantially similar issues and defences.

Process -

- Ability of the parties to appeal. Right of appeal is available in ADR by taking the contentious issues to the higher forums (Wing, 2008).
- Confidentiality of the process - The parties to a dispute are not allowed to disclose any information or materials to the public unless by mutual consent of the parties (Cheung et al., 2002). This is normally achieved by establishing “house rules” in the form of a written agreement by the parties to that effect.
- Control by parties - Parties must consider the degree to which they will lose decision-making authority to a third party (Hoogenboom and Dale, 2005). However, in litigation and arbitration, the parties have no means to control the outcome of the dispute beyond the presentation of evidence.
- Flexibility of the proceeding - A key learning outcome in problem-solving domains is the development of procedural flexibility, where learners know multiple procedures and use them appropriately to solve a range of problems (Verschaffel et al., 2009).
- Formality – The majority choose to use ADR because of the informality of it (Delgado et al., 1985). It is because parties do not feel threatened or intimidated like in formal courts.
- Privacy of the proceeding—Privacy is one of the elements in ADR (Gibbons, 1999). It is because both the parties like to keep some of the facts private.

- Range of Disputes – Construction disputes can be resolved using ADR (Treacy, 1995).
- Voluntariness - The disputants need to be educated in the benefits of the ADR process compared with those of arbitration and litigation if the parties are to use ADR voluntarily (Cheung et al., 2002).

Settlement -

- Binding decision/settlement - In a purely consensual ADR process, nothing is binding on the parties until they sign an enforceable settlement agreement. Hence, the parties can walk out at any time during the process without interfering with their legal rights (Cheung et al., 2002).
- Consensuses of the parties for settlement – Face-to-face conversations, managed by professional neutral third parties try to resolve disputes with the parties' agreement. (E. Susskind, 2005).

Benefits -

- Addressing power imbalance - Eleven steps are suggested for addressing power imbalances in mediation (Davis and Salem, 1984): (1) do not make unnecessary assumptions about existing power relationships, (2) exploit mediation's innate ability to address power imbalances, (3) encourage the parties to share knowledge, (4) use the parties' desire to settle as a lever, (5) compensate for low-level negotiating skills, (6) interrupt intimidating negotiating patterns, (7) make accommodations for language differences, (8) respect the needs of young people, (9) watch to see that one party does not settle out of fear of violence or retaliation, (10) conduct mediation in a context that offers information and support to both parties, and (11) do not rush to settlement.
- Cost - This includes the expenses of outside expertise such as counsel, consultants, and expert witnesses and the costs associated with administering the process (Hoogenboom and Dale, 2005). The best time to advise the parties about costs is before the process begins, instead of during the often emotion-charged process.

Litigation is a formal dispute resolution process involving arguments in case law, a challenges authorized by law and a court of justice for enforcing a right (Lexicon, 2011).

According to Pagone,(2008) in addition to the opposing parties, the court procedure involves professional judges, legal advocates and the use of technical advisors. The cost involved in litigation is difficult to control. The said costs mean not only the money paid out in the settlement, but also the transaction costs incurred while resolving a dispute, which could be considerably high (Gebken et al., 2005, Liet al., 2012,2013). Cost has become a major factor in the selection of ADR for a particular dispute as discussed in previous sections. In the dispute resolution management system discussed by Gebken and Gibson, (2006) the costs involved in ADR are considered as the risk in the conflict management in a construction project.

The choice of dispute resolution method has a bearing on cost management (Summerfield, 2021). Early efforts at ADR can help resolve business disputes quickly and efficiently. Dispute and dispute settlement costs are categorized under the “transactional cost” by Walker and Kwong Wing, (1999) when developing the link between the project management theory and transactional cost. There they further claim that project cost is not only the cost in the agreement or the final account but also the costs incurred due to in-house client opportunity cost, cost to establish the project organization structure, cost for co-ordination, cost for contract administration, cost for negotiation between parties, cost for contract monitoring and finally cost for enforcing the contract including dispute settlement. Gebken et al., (2006) have discussed dispute management through a risk management model, types of costs relevant for dispute resolution such as;

- a). Direct costs – Legal fee, Expert witnesses, court/other fees
 - b). Indirect cost – management time, staff time, in-house counsel,
 - c). Hidden costs - Business relationships, inefficiencies, delay, and loss of quality.
- Ease of implementation – Voluntary processes like mediation reach an amicable settlement (Cheung, 2010). Adjudication decisions made by a third party can be temporarily binding until it is enforceable from a court judgement or arbitration (Coggins and Donohoe, 2012).

- Improvement of communication between parties – ADR can consider a way of teaching communication skills (Davis and Netzeley, 2001).
- Penalty – In compulsory ADR provision is given for authorized judges to financially punish disputants who reject ADR decisions and request new trials (Reynolds, 1991).
- Preservation of business relationships - This plays a substantial role in determining dispute resolution strategies (Hoogenboom and Dale, 2005). It should be noted that litigation is considered as an adversarial process, which often results in increasing the devastation of the good relationship between the parties. On the other hand, cooperative processes such as negotiation increases the likelihood of future contracts with the client.
- Time for completion - The time required to resolve the dispute directly impacts the cost of pursuing the dispute (Hoogenboom and Dale, 2005). Further, the duration of a resolution process is a function of the procedural complexity of the process itself, the degree of complication of the dispute, and the motivation of the parties to resolve the matter.

3.5 Provisions for dispute resolution within the Standard Forms of Contract being used in Sri Lanka

Alternative dispute resolution has become a solution to get out of adversarial, costly and time-consuming litigation procedures (Kaplan et al. 1991; Fenn and Gameson 1992; Brown and Marriott 1999). Notably, the Construction Industry Development Authority in Sri Lanka has included a dispute resolution process in the “Standard Bidding Document” (SBD) in 2007 for the local construction contracts (Abenayake and Weddikara 2013). Further, for international contracts the Federation Internationale Des Ingenieurs-Conseils (FIDIC) use a form of contract which includes ADR clauses as well.

Table 3.4 displays the dispute resolution clause against the form of contracts which are used in local and international contracts in the Sri Lankan construction industry.

Table 3 -4 Dispute resolution clause of the form of contracts used in the Sri Lankan construction industry

Form of contract	Dispute resolution clause
SBD/01 – Standard Bidding Document 1	Clause: 19
SBD/02 – Standard Bidding Document 2	Clause: 19
SBD/03 – Standard Bidding Document 3	Clause: 14
SBD/04 – Standard Bidding Document 4	Clause:14
FIDIC	Clause: 20

The following clause generally indicates the information included in above clauses (Cida.gov.lk, 2022);

“Any Dispute of whatever nature arising out of or in relation to this Agreement shall in the first instance be attempted to be resolved by way of Adjudication in accordance with Construction Industry Development Act No.33 of 2014 Clause 51 with the Adjudication procedure”.

3.6 Summary

Dispute resolution starts when the parties to the dispute do not agree on a matter where one party is forced to give in or surrender. Negotiation comes as the first step to resolving the dispute which is the least expensive, speedy, voluntary and unstructured process. Negotiation is a cost-free process where parties can discuss and amicably settle their dispute without going for formal procedures. Resolving disputes through negotiation will positively affect the cultural background of the parties and the moral values. Hence, the disputants need to fully cooperate among themselves in order to see the success in negotiation. There are unique challenges faced by the parties while going through negotiation. However, there can be situations where negotiations will not succeed as the dispute resolution method for a particular dispute. A couple of examples of such disputes are claims caused by engineers’ mistakes and determination of the minimum acceptable amount of the claim value. Therefore, dispute negotiation is difficult, adversarial and inefficient.

Therefore, parties will look into other resolution methods like mediation and conciliation. A mediator or conciliator has no power to impose a solution and he can only guide the parties to a reasonable solution.

However, there are several mediation acts available in Sri Lanka except for the construction contract mediation. The Construction Industry Development Authority (CIDA), in Sri Lanka tries to encourage mediation as an initial attempt to resolve disputes by providing mediators and other professional guidance. But, unfortunately, CIDA forgot to include mediation as a dispute resolution method in the standard forms of contracts which were prepared by CIDA and commonly used by local contractors. Even though there are many advantages in mediation, mediators have limited powers of clarifying disputes and educating parties and coming to a binding solution. Therefore, if parties disagree with the solution given by the mediator/conciliator they can simply ignore it.

Unlike in mediation recommendations, the conciliator's recommendation on the settlement should not be shared with the adjudicator or arbitrator unless both parties agree. However, the cost of conciliation is more than mediation and very similar to adjudication. However, both the methods are simple, lower cost and help to protect the relationship among parties. The next stage in the ADR process involves adjudication and arbitration which could give a legally binding decision. Adjudication gives a temporarily binding decision which can be ignored by the arbitration or litigation award.

The Sri Lankan adjudication is a "contractual adjudication" which is mentioned in the contract agreement as a dispute resolution method. The forms of contracts used in Sri Lanka are prepared by CIDA. Adjudication is included in those standard forms of contracts (SBD) generally, used by local contractors. Even though the adjudicator should give his determination within 28 days, practically it is an impossible task. However, many experts in Sri Lanka find reasons for not having effective adjudication in the local construction industry. Major points were barriers to enforcing adjudication and lack of knowledge and training in adjudication. In that sense, construction industry stakeholders try to upgrade contractual adjudication to statutory adjudication similar to in United Kingdom construction industry.

The last ADR method discussed in this chapter is arbitration which is a binding decision for the parties. Sri Lanka has an arbitration act which holds the statutory powers. Therefore, an arbitration decision is more likely to be accepted than rejected. The cost and complex formalities in arbitration discourage the industry professionals from using arbitration as a dispute resolution method.

Scholars and industry practitioners developed attributes of ADR as main and sub attributes. The four main attributes are neutral third party, outcome, process and settlement. Under main attributes there are twenty-four sub attributes discussed. Cost is a sub attribute which lay under the main attribute “outcome”, nevertheless makes a huge impact on the burden borne by the disputing parties.

CHAPTER 4

4.0 Methodology

4.1 Introduction

A considerable amount of literature has been published on causes of disputes and ADR methods in the construction industry. Much of this research has focused on identifying and evaluating mitigatory measures for emerging disputes in the construction industry and ways to identify the most suitable ADR method to resolve those disputes. These studies were done both in qualitative and quantitative strategies. To achieve the aim of this research the scientific procedure used will be elaborated in detail during this chapter.

This research aims to develop an improved framework for ADR practices in the Sri Lankan construction industry. The philosophical stand followed by the researcher, research strategy, design, methods, and the tools used in this research including the existing theories will be discussed in this methodology chapter. It is important to justify the methodology used, in order to support the significance of the research (Crotty, 1998).

Therefore, to achieve the aim of the research the methodology will be discussed and relevant justifications for the choice of methodology will be presented with respect to the phases of the research shown in Table 4.1.

The five objectives of the research have been divided into five phases based on the data collection methods. Therefore, the data collection methods of each phase were presented in due cause. However, in phase 1 semi-structured interviews, phase 2 second set of semi-structured interviews, phase 3 case study method, phase 4 questionnaire survey and finally, phase 5 focus group discussion. In phase 2 data relevant to both objective 2 and 3 were collected. From phase 3 data the already collected data for objective 3 in phase 2 was validated.

Table 4 - 1 Phases of the Research

Phases	Objective	Research goal
1	Objective 1	To examine the causes of disputes and their inter-relationship in relation to the Sri Lankan construction industry.
2	Objective 2	To explore the concept of ADR and its applicability for dispute resolution in the Sri Lankan construction industry.
	Objective 3	To evaluate the current ADR practice with respect to attributes of ADR in the Sri Lankan construction industry.
3	Objective 3	To examine existing projects in Sri Lanka using a case study approach to evaluate the attributes of ADR in the Sri Lankan construction industry.
4	Objective 4	To analyse the Sri Lankan construction industry specific aspects that related to the successful implementation of ADR.
5	Objective 5	Validating a framework for improved ADR practice for the Sri Lankan construction industry.

4.2 Research in Built Environment

The built environment can be defined as, ‘the human-made space in which people live, work, and recreate on a day-to-day basis’ (Roof and Oleru, 2008). Therefore, built environment research covers many aspects for example technology, management, innovation, problem solving, environmental aspects, and building and infrastructure projects (Ahmed et al., 2016). Creswell (2012) argued that no specific research method has an advantage over others, but that it is the research question of the study that determines the most appropriate method to be adopted.

The research question of this study is to find out the reasons for the inefficiency of the current ADR practice in the Sri Lankan construction industry, and to find reasons for the current practical problems. Those reasons have initiated from the literature and been confirmed through primary data. There are two main types of research namely Basic and Applied research. According to Frascati Manual (2002: 77) the definition for basic research is “experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view” . Applied research is also original investigation undertaken in order to acquire

new knowledge, however, directed primarily towards a specific practical aim or objective (Gulbrandsen and Kyvik, 2010). Since, this research is to find solutions for current problems faced by the managers (Bryman, 2016) the study identified as applied research.

4.3 Research Philosophy

The most recent study of Saunders et al., (2019) defined “research philosophy” as a system of beliefs and assumptions about the development of knowledge. The nature of the research philosophy and its reflection on this research will be displayed throughout this section. As defined by Sample, (2009), philosophy is pursuing and finding wisdom. According to Macdonald, (2001), ‘wisdom is not one thing; it is a whole array of better-than-ordinary ways of being and living and dealing with the world’. Philosophy gives guidance to carry out the research (Sefotho, 2013) while taking relevant assumptions on human knowledge (epistemological assumptions), realities encountered in the research (ontological assumptions), and ways your values affect the research (axiological assumptions). Similarly, a well-thought-out and consistent set of assumptions will constitute a credible research philosophy, which will underpin the methodological choice, research strategy, and data collection techniques and analysis procedures (Saunders et al., 2019).

As explained by Creswell and Creswell, (2018) there are three components in qualitative, quantitative or mixed methods research approaches. Those are designs (quantitative, qualitative, mixed methods), research methods (questions, data collection, data analysis, interpretation, validation), and philosophical worldviews (post-positivist, constructivist, transformative, pragmatic). Wilson (2013) produced a honeycomb model which identified six different areas of research namely, philosophy, approach, strategy, design, data collection and data analysis techniques. According to Wilson the world view is divided into two main concerns: epistemological (positivism, interpretivism and pragmatism) and axiological (objectivism and subjectivism). Kagioglou et al., (1998) offered a nested approach similar to the Honeycomb model but it only discusses three steps of research techniques. Saunders et al’s., (2019) research onion is another philosophical framework which includes several layers,

namely philosophy, approach to theory development, methodological choice, strategies, time horizon and techniques and procedures.

4.3.1 Ontological

As a philosophy of research, the meaning of ontology is extended to the study of the nature of reality (Gray, 2009). Saunders et al., (2019) confirmed this definition ten years later. Crotty, (1998) understood ontology to be the study of being and Grix (2002) claimed 'ontology is the starting point of all research'. Therefore, ontology is defined as the study of being and reality of the things. Therefore, it is important for a researcher to understand "how things really are and how things really work" (Scotland, 2012) to see the success in the research. This philosophical stand will enable us to take the resistance to challenge positively and use it for the benefit of a system or organization (Thomas and Hardy, 2011).

4.3.2 Epistemology

Epistemology is a branch of philosophy concerned with the nature and forms of knowledge (Cohen et al. 2007). This means the way to communicate valid and legitimate knowledge to others (Burrell and Morgan 2016). According to Kroon, (1993) there is no absolute knowledge. Therefore, epistemology is a theory of knowledge of what can be known and the criteria adopted to justify it being knowledge.

Epistemology is used here to refer to the ways in which it is possible to gain knowledge of this reality. It is the claims or assumptions about how that reality can be made known (Blaikie, 1993).

Finally, epistemology can be defined as the assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how knowledge can be communicated to others.

4.3.3 Axiology

Axiology is the roles and values of the research process (Saunders et al., 2015). All the human actions are guided by their values (Heron, 1996). Therefore, the research study can be affected with a researcher's own values and believes, which can be reflected through the research write- up (Saunders et al., 2015). This incorporates questions about how we, as researchers, deal with both our own values and those of our research participants. Heron (1996) argues that our values are the guiding reason for all human action.

These three types of philosophical assumptions are scattered between two opposing extremes defined as objectivist and subjectivist (Niglas, 2010).

Objectivism – Objectivists assume the reality of the world is external to us and others (Saunders et al., 2019). The ontology of objectivism is the realism which is the extreme end of objectivism (table 4.2). On the other hand, epistemological objectivists can observe and measure the reality (Morgan and Smircich, 1980). Gill and Johnson, (1997) believed that the world is hard and tangible and independent from an individual's thoughts and emotions. Therefore, axiologically the reality is detached from individual's emotions and values. In that sense the objectivist does research on reality believing that they will find one truth using measurable observations without getting involved emotionally.

Subjectivism – Subjectivists believe that the reality is created by the people in the world which can be defined further with normalism the extreme end of subjectivism (Saunders et al., 2019). Since the individuals are different ontologically, subjectivism presents multiple realities of the different experiences of mankind. Therefore, epistemologically multiple realities can be obtained through narratives of individuals (Morgan and Smircich, 1980). They further explained that the reality lies within the researcher and it is not outside of the researcher. Therefore, subjectivists conduct research believing that there are multiple realities coming through different individual perspectives including the researcher's own values and emotions.

The philosophical assumptions discussed above have been defined variously in literature. Easterby-Smith et al. (1991) identified those two as positivism and phenomenology where Hughes and Sharrock (1997) described them as positivism and interpretivism.

However, in this research the two extreme ends of philosophical assumptions were considered as objectivism and subjectivism. Aspects of their nature based on ontological, epistemological and axiological assumptions are listed in Table 4.2.

Table 4 - 2 Philosophical assumptions as a multidimensional set of continua (Saunders et al., 2019)

Assumption Type	Continua with two sets of extremes	
	Objectivism	Subjectivism
Ontology “Nature of reality”	<ul style="list-style-type: none"> • Real • External • One true reality • Granular (things) • Order 	<ul style="list-style-type: none"> • Decided by convention • Socially constructed • Multiple realities • Flowing (processes) • Chaos
Epistemology “What is acceptable knowledge”	<ul style="list-style-type: none"> • Adopts assumption of natural scientist • Good quality data: facts, numbers, observable phenomena • Law-like generalizations 	<ul style="list-style-type: none"> • Adopts assumptions of arts and humanities • Good quality data: opinions, narratives, attributed meanings • Individuals and contexts, specifics
Axiology “Role of values”	<ul style="list-style-type: none"> • Value-free • Researcher detached 	<ul style="list-style-type: none"> • Value-bound • Researcher integral and reflexive

4.3.4 Research paradigm

A paradigm is a collection of thoughts which guide a researcher what to study, how to study and how results should be interpreted (Bryman, 2012). Burrell and Morgan (2016) defined paradigm as a set of assumptions which a group of people have as their frame of reference, mode of theorising and way of working. Figure 4.3 depicts the Burrell and Morgan paradigm and identifies that the radical structuralist tries to achieve fundamental changes of the organization by changing the hierarchies, in contrast to the functionalist who tries to do the same within the current structure. The radical humanist tries to change the status quo of the

organization through politics, domination, and oppression, whereas an interpretivist tries to do the same by understanding the failures which can be faced in the future due to unforeseen circumstances.

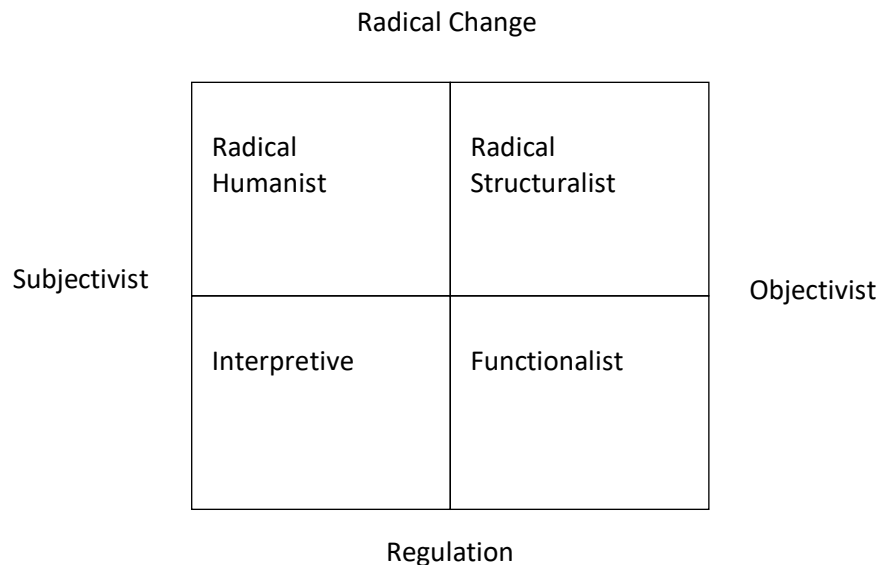


Figure 4 - 1 Four paradigms for organisational analysis (Burrell and Morgon, 2016)

In contrast Saunders et al (2019) suggested five major philosophies; positivism, critical realism, interpretivism, postmodernism and, pragmatism.

Positivism – Positivism uses quantitative and experimental methods to test hypothetical-deductive generalizations (Amaratunga et al., 2002). It assumes a stable reality that can be measured and observed in a rigorous and systematic way to develop objective knowledge (facts). Ontologically, it assumes a single objective reality (Saunders et al., 2019).

Critical realism – Critical realism claims that knowledge can exist independently (Fleetwood, (2005), Sayer (2000)). Easton, (2010) argued that critical realism assumes a transcendental realist ontology realist/interpretivist epistemology and is generally free from axiology. Critical realist research therefore focuses on providing an explanation for observable organisation events by looking for the underlying causes and mechanisms through which deep social

structures shape everyday organisational life (Saunders et al., 2019). Saunders further claimed that, post positivism is often referred to as critical realism

Interpretivism – Interpretivism is different from positivism as it aims to see the richness of the insights of social actors, without trying to generalize the key variables and factors. (Myers, 2008; Saunders et al., 2012; Bhattacharjee, 2012). Interpretivism as discussed is more sensitive towards individual meanings and contribution rather than being compromised through the positivist research philosophy (Saunders et al., 2018). Therefore, the data gathered and analysed would be less likely to be generalised through adoption of the interpretivist paradigm given the consideration that data is mainly dependent on a specific context, viewpoint, and values (Saunders et al., 2019). However, adoption of the interpretivism paradigm can provide in-depth understanding of certain contexts such as cross-cultural studies, factors influencing certain development through collection and interpretation of qualitative data leading to deep insights and conclusions that may differ from others (Myers, 2008; Saunders et al., 2012). Adoption of the interpretivism paradigm would lead to generation of high-level validity in data as it is based on personal contributions with consideration of different variables (Myers, 2008).

Postmodernism – Value context-specific rich descriptions of cases, while including stronger assertions on ambiguity, fluidity, and constant transformation, as well as immanent contradiction (Romani et al., 2018). According to postmodern studies the reality of the world and organisations is derived from a series of texts (Derrida, 1967; Foucault, 1977). Therefore, postmodernists focus more on language, texts and discourses.

Pragmatism – For the purpose of accepting both a singular and multiple realities in the world the paradigm pragmatism emerged (Feilzer 2010). In that sense, Easton, (2010) argued that pragmatism can provide a powerful justification on the reality through case studies.

However, the main paradigms or worldviews that traditionally are presented as being fundamentally opposed are those of positivism/post-positivism and constructivism/interpretivism (Creswell & Plano Clark, 2007).

4.3.5 Philosophical reasoning in this research

This study applies pragmatism as its underlying research philosophy. Justification for this is presented using the table 4.3 which built based on the paradigm presented by Saunders et al.,

(2019). Pragmatism supports the simultaneous use of qualitative and quantitative methods of inquiry to generate evidence to support best practice (Shaw, Connelly and Zecevic, 2010). Since the study focused on finding a solution for the already existing question in the construction industry which created by its stakeholders (Chapter 2 and 3) their perception and thoughts were collected by using multiple research philosophies.

According to the table 4.3 first three phases were based on the interpretivism paradigm, phase 4 is based on pragmatism and finally, the phase 5 is again based on the interpretivism paradigm.

Table 4 - 3 Philosophical reasoning of different phases of the research

Phases	Ontology	Epistemology	Axiology	Paradigm
1	Multiple meanings, interpretations and realities Actual and real	Perception of the academics (through literature review) and industry professionals (through semi-structured interviews) and interpreted and develop new understanding.	Researcher's key contribution through narrative interpretation in data analysis	Interpretivism
2				
3				
4	'Reality' is the practical consequences of ideas Flux of processes, experiences and practices	Focus on problems, practices and relevance Problem solving and informed future practice as contribution	Value-driven research	Pragmatism
5	Multiple meanings, interpretations, and realities Actual and real	Perception of industry professionals (through focus group) and interpreted and develop new understanding.	Researcher's key contribution through narrative interpretation in data analysis	Interpretivism

The Table 4.3 illustrates the philosophical reasoning of each phase of this research study. The literature findings (perception of the academics) of both phases 1 and 2 were used to prepare the semi-structured questions to understand the industry professionals' opinion of causes of disputes, their inter-relationships, applicability of ADR in dispute resolution, and the attributes of ADR with respect to current practice. In Phase 3, through the case study interpretations,

objective 3 of this study was verified. All three phases' data was analysed through interpretation. Since the whole study was identified as applied research and the professionals of the industry play a greater role in dispute occurrence and resolution, their view on each element in the phases are important. The problem, reason for the problem, solution and the reason for the solution were discovered. All three phases aligned with the subjective ontology where the researcher assumed the thoughts, interpretation and meanings of the social actors in the world (Crotty,2003). With respect to the subjective ontological position, the interpretivist epistemological position adopted behavioural aspects based on participants' experiences and real-world case studies. The subjective ontology and interpretivist epistemology build in the paradigm of interpretivism. Further, following interpretivism enables the researcher to develop a unique context in which the interview participants and case studies are involved.

Aspects related to the successful implementation of ADR in the Sri Lankan context were uncovered through the view of the larger population in phase 3.

The results of all four phases were used in developing the framework for an improved ADR for the Sri Lankan construction industry. The validation of the framework was confirmed by the opinion of the industry professionals as each element of the framework was discussed against each person's opinion and interpreted.

Both Phase 4 and 5 were based on the opinion of diverse experiences of different individuals using two different methods. Phase 4 questions were prepared to gain objective and subjective knowledge on ADR and associated issues with detailed descriptions. Phase 5 was focused to obtain constructive criticism based on the current ADR practices in the Sri Lankan construction industry. Therefore, Phase 4 was developed on pragmatism and phase 5 developed on interpretivism paradigms.

The research question was derived in a way to find a solution for a real problem current at this point in time. The philosophical assumptions taken by the researcher were interpretivist understandings of socially constructed reality, with the emphasis on interrogating the value and meaning of research data through examination of its practical consequences which can be defined as pragmatism (Morgan, 2014).

4.4 Approaches to theory development

There are two contrasting approaches that apply in developing theories in a research project namely induction and deduction (Saunders et al., 2018). The researcher needs to know what sort of theory he is going to build and whether the data is collected to test or to build theories (Bryman, 2012).

Deduction - Deductive reasoning is a theory testing process which commences with an established theory or generalisation and seeks to see if the theory applies to specific instances (Hyde, 2000). In the deductive research approach the researcher obtains the research conclusion logically (Saunders et al., 2018). However, the quantitative researcher uses the literature deductively as a framework for the development of research questions or hypothesis (Creswell and Creswell, 2018).

Induction - The purposes for using an inductive approach are to (1) to condense extensive and varied raw text data into a brief, summary format; (2) to establish clear links between the research objectives and the summary findings derived from the raw data and (3) to develop a model or theory about the underlying structure of experiences or processes which are evident in the raw data (Thomas, 2006). Inductive reasoning is a theory building process, starting with observations of specific instances, and seeking to establish generalisations about the phenomenon under investigation (Hyde, 2000). An inductive approach is a systematic procedure for analysing qualitative data where the analysis is guided by specific objectives (Creswell and Creswell, 2018).

Abduction -The notion of abduction was first introduced by the philosopher Peirce in 1958 and then In the field of artificial intelligence in 1973 by Pople, and the research in this area was reviewed by Charniak and McDermott. In that sense they stress the importance of abduction as a third form of inference besides induction and deduction (Paul, 1993). Hence, abduction is not only theory to data or data to theory, it moves back and forth until it comes to the acceptable conclusion (Saunders et al., 2018).

4.4.4 Research approach adopted by this research

The research approach adopted during different phases of this research is presented in table 4.4.

Table 4 - 4 Research approach applicable for this research

Phases	Data usage	Theory Developed	Approach
1	Multiple meanings and interpretations of industry professionals used to explore a phenomenon.	Establish list of dispute categories and related causes, and establish link between dispute causes relevant to Sri Lankan construction industry	induction
2	Multiple meanings and interpretations of industry professionals used to explore a phenomenon.	Establish ADR practices and relevant attributes, and establish the link between dispute causes and ADR in the Sri Lankan construction industry	Induction
3	Understand the dynamics of the topic being studied within its setting/context through real world case studies	Current ADR practices evaluated against its attribute and identify the characteristics of ADR practices in Sri Lankan construction industry.	Induction
4	Understand the relationship between variables and know the reasons through the detailed explanation for those within its context	Establish specific aspects that are related to the successful implementation of ADR in the Sri Lankan construction industry	Abduction
5	Multiple meanings and interpretations of industry professionals about a product is interpreted for improvements.	Validate the newly developed framework for an improved ADR practice in the Sri Lankan construction industry	Induction

The extensive and varied raw data collected during Phase 1 and 2 is used to create a summary (Thomas, 2006) on disputing causes, ADR procedures and the availability of attributes in the Sri Lankan construction industry. The researcher's philosophical assumption on the world which engages and constructs the meanings of it by human beings was the main logic behind

using the inductive approach (Crotty, 1998) in Phase 1 and 2. On the other hand an inductive approach was used for the purpose of obtaining a clearer understanding on the meanings of human attached real world events (Wilson, 2014).

Phase 3 engaged with case study analysis. There, the results of the phase 1 and 2 were validated using case studies. The research, with the realization of lack of ability in generalization in the developed theory using the inductive approach (Wilson, 2014), offered more focus to closely study and understand the context of the research question. Then the already developed concepts during Phase 1, 2 and 3 were presented in Phase 4 to industry professionals allowing them to provide detailed justification for the choice in the question answers for the purpose of possible theory testing and deeper understanding of the context (Saunders et al., 2018). Since it is essential to know the trustworthiness of the developed framework, it was subjected to the comments and views of the industry professionals for further development in Phase 5. In that sense, the research as a whole used the abductive research approach where theory to data and data to theory was moved back and forth during all five phases in this research (Saunders et al., 2019).

4.5 Methodological Choice

As explained previously ontology is 'reality', epistemology is the relationship between that reality and the researcher and methodology is the technique used by the researcher to discover that reality' (Sefotho, 2015). The chosen paradigm decides on the methodology to be used in research. There is a variety of research methodologies designed to address a multiplicity of problems in research (Tuli 2010).

The three common approaches to conducting research are quantitative, qualitative, and mixed methods (Williams, 2007).

4.5.1 Qualitative

Qualitative research is useful to deepen understanding of the reflection of everyday life by local actors (Huberman (1994); Stake (1994)). Huberman, (1994) further explained that the role of the researcher in qualitative study is to gain a holistic overview of the context of the study. Qualitative methods produce detailed in-depth data through a small number of individuals (Patton, 1991). Constructivists favour more in qualitative research since they believe in subjective inquiries to find reality rather than a single objective reality (Creswell and Plano Clark, 2007). Qualitative research generally adopts an inductive approach by understanding the patterns and the interests of social actors (Azunga, 2018). However, it is often argued that qualitative data analysis is complex, laborious and time consuming (De Csterle et al., 2012). When generalizing qualitative study, the researcher focuses to expand theories for a particular phenomenon rather than establishing frequency of occurrence with the population (Yin, 1994).

The following characteristics were presented by Ahmed et al., (2016) in relation to qualitative research.

- Uses inductive approach
- Involves theory building
- Employs subjective approach
- Open and flexible approach
- Researcher is close to the respondents
- Employs theoretical sampling
- Uses explicative data analysis
- Low level of measurement

4.5.2 Quantitative

A key distinction in quantitative study from the qualitative study is the theory generalizability through the interest, behaviour and characteristic of a sample for a population (Hyde, 2000). It is a statistical generalisation through a sample selected by different methods (Kinnear and

Taylor, 1996). Therefore, the methodology of a quantitative research maintains the assumption of an empiricist paradigm (Creswell, 2003). As a result, data is used to objectively measure (Williams, 2007). There are three broad classifications of quantitative research as follows (Leedy and Ormrod, 2001);

- Descriptive – examine the situation, as it exists in its current state.
- Experimental – investigates the treatment of an intervention into the study group and then measures the outcomes of the treatment.
- Causal – examines how the independent variables are affected by the dependent variables and involves cause and effect relationships between the variables.

The following characteristics were presented by Ahmed et al., (2016) . A quantitative research:

- Uses deductive approach
- Involves theory testing
- Employs objective approach
- Closed and planned approach
- Researcher is distant from respondents
- Employs random sampling
- Uses reductive data analysis
- High level of measurement

4.5.3 Mixed method

Both qualitative and quantitative research methodologies each have their own strengths and weaknesses (Ackroyd and Hughes, 1992). Therefore, for the built environment, Amaratunga et al., (2002) argue that the mixed method is more suitable since the ineffective data collection of a single standard approach can be minimized through a second method. A mixed method

study combines elements of qualitative and quantitative research methodologies in a single study (Creswell et al., 2008). There are four different types of mixed methods (Creswell, 2012) as follows;

- Sequential Explanatory – collects number data and then narrative data to explain the number data
- Sequential Exploratory – narrative data and then validate through number data
- Embedded – the data collects sequentially but one set will be supportive of the other.
- Triangulation – This method collects both quantitative and qualitative data at the same time and merges the results to generate greater reliability.

The strengths and weaknesses of mixed method are listed in Table 4.5.

Table 4 - 5 Strengths and Weaknesses of mixed method (Ahmed et al., 2016)

Strength	Weaknesses
<ul style="list-style-type: none"> ➤ Provides strong evidence for conclusions. ➤ Increases the ability to generalize the results. ➤ Produces more complete knowledge necessary to inform theory and practice. ➤ Answers a broader range of research questions. ➤ Uses the strength of one method to overcome the weakness in another method. 	<ul style="list-style-type: none"> ➤ More expensive and time consuming ➤ Researchers need to understand fully how to use multiple methods and approaches ➤ Difficult when used in a single study ➤ Can be difficult for a single researcher, especially when the two approaches are used concurrently

4.5.4 Methodological choice of this research

The methodological choice is based on the philosophical assumption of the researcher in anticipating the type of data needed to be collected to respond to the research question (Williams, 2007) (Khaldi, 2017). Therefore, generally the quantitative researchers subscribe to a “positivist” paradigm, while qualitative researchers subscribe to a “relativist/interpretivist” paradigm (Hyde, 2000). With that note, Table 4.6 presents the methodological choice applicable to each phase of this research.

Table 4 - 6 Methodological Choice of this research

Phases	Paradigm	Approach	Methodological Choice
1	Interpretivism	Induction	Qualitative
2	Interpretivism	Induction	Qualitative
3	Interpretivism	Induction	Qualitative
4	Pragmatism	Abduction	Mixed method
5	Interpretivism	Induction	Qualitative

Phases 1, 2 and 3 were completed by collecting the data through the perception of industry professionals and analyzing that through interpretations. During Phase 4 the researcher used questionnaires consisting of open ended and close ended questions which enabled the participants to express their thoughts freely when answering. The analysis in that phase was completed both statistically and thematically. In that sense the methodological approach used in Phase 4 was a mixed method.

In Phase 5 the developed framework was presented to test its reliability through the view of the practitioners. Phases 1, 2, 3 and 5 were organised in such a way as to obtain the view of social actors in the construction industry where the researcher transcribed and identified the patterns derived from these interviews and finally generalized because of these patterns (Khaldi, 2017). Therefore, a qualitative methodological approach was used in those four phases. Through the qualitative method the researcher was able to reveal multiple realities through the contextual information provided through the experiences of individual learners (Warfa, 2016) in the Sri Lankan construction industry.

Overall research can be considered as a mixed method when the aim of the research is achieved through multiple methods to increase the breath, depth and consistency of the research findings (Green, 2008).

There are several types of mixed method approaches available such as Sequential explanatory, Sequential exploratory, Sequential transformative, Concurrent triangulation, Concurrent nested, and Concurrent transformative (Creswell et. al., 2003). In this study while doing the qualitative data collection quantitative data collection was conducted concurrently. In

concurrent nested design there is a predominant method that guides the project (Warfa, 2016). The quantitative data collection method was given less priority and is embedded or nested within the predominated qualitative data collection methods. The data collected from the two different methods are mixed during the analysis phase of the research. The data collected using quantitative study enabled to enrich the qualitative data within the study. Figure 4.2 displays how the phases are categorized in the concurrent nested approach.

In this study the researcher examines the dispute causes and their interrelationships in the Sri Lankan construction industry from the view of industry professionals. It is further examined by the qualitative methodological approach in Phase 1, 2, 3, 5 and part of 4 which is the outer layer of the box while part of phase 4 is retained inside the small box.

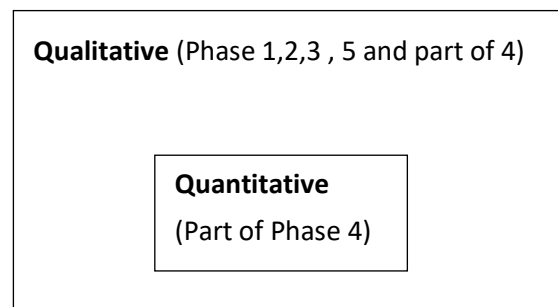


Figure 4 - 2 Mixed method - Nested approach

4.6 Data Collection method

The choice of the research instruments is determined by the research question, the research objectives, the amount of existing knowledge, available time and resources and finally the philosophical underpinnings of the research (Saunders et al., 2018). In this research the data collection methods can be categorized into primary (interviews, questionnaires, case studies) and secondary (literature review). For the purpose of validating the conceptual framework the researcher adopted focus group discussions.

In the following sections, the use of data collection methods is discussed.

4.6.1 Literature Review

A Literature review enables the researcher to identify the theories of previous research which influenced the choice of research topic and the methodology adopted (Ridley, 2012). Further, it allows the researcher to demonstrate the knowledge about the relevant field of study including vocabulary, theories, key variables and phenomena, and its methods and history (Randolph, 2009). Firstly, with reference to the research question several concepts were identified and later those were converted into the objectives of the study (Malley et al., (2005). Those identified concepts are presented in Figure 4.2. Secondly, to have a comprehensive study on previous studies the themes identified in Figure 4.2 were used to search in different sources such as electronic databases, reference lists, existing networks, relevant organizations and conferences (Saunders et al., 2019). However, from the practical point of view the researcher considered past studies presented in the English language and published from 1985. Therefore, there is less likelihood of the researcher missing any previous ideas developed in this area with respect to the Sri Lankan context. Then the key items obtained from the previous studies were tabulated and the researcher recorded information under the following headings: authors, year of publication, study location, intervention type, study population, aims of the study, methodology, outcome, and important results. These not only enabled the researcher to judge the quality of the research but also the ontological and epistemological views of the scholars in the study area. Firstly, the literature was organized thematically, according to the themes presented in Figure 4.3 and listed in chronological order highlighting the studies geographic and research method including the number of participants. Then, the researcher identified the similarities and differences in outcomes with reference to the nature of this research. Finally, the tabulated information was collated, summarized and the results reported in this step. The similarities in the studies were presented including the methodologies adopted. Through this activity the researcher identified that the most popular method in finding out causes of disputes was quantitative methodology. But there were a few qualitative studies as well. The researcher was able to understand the story so far by analyzing the existing literature.

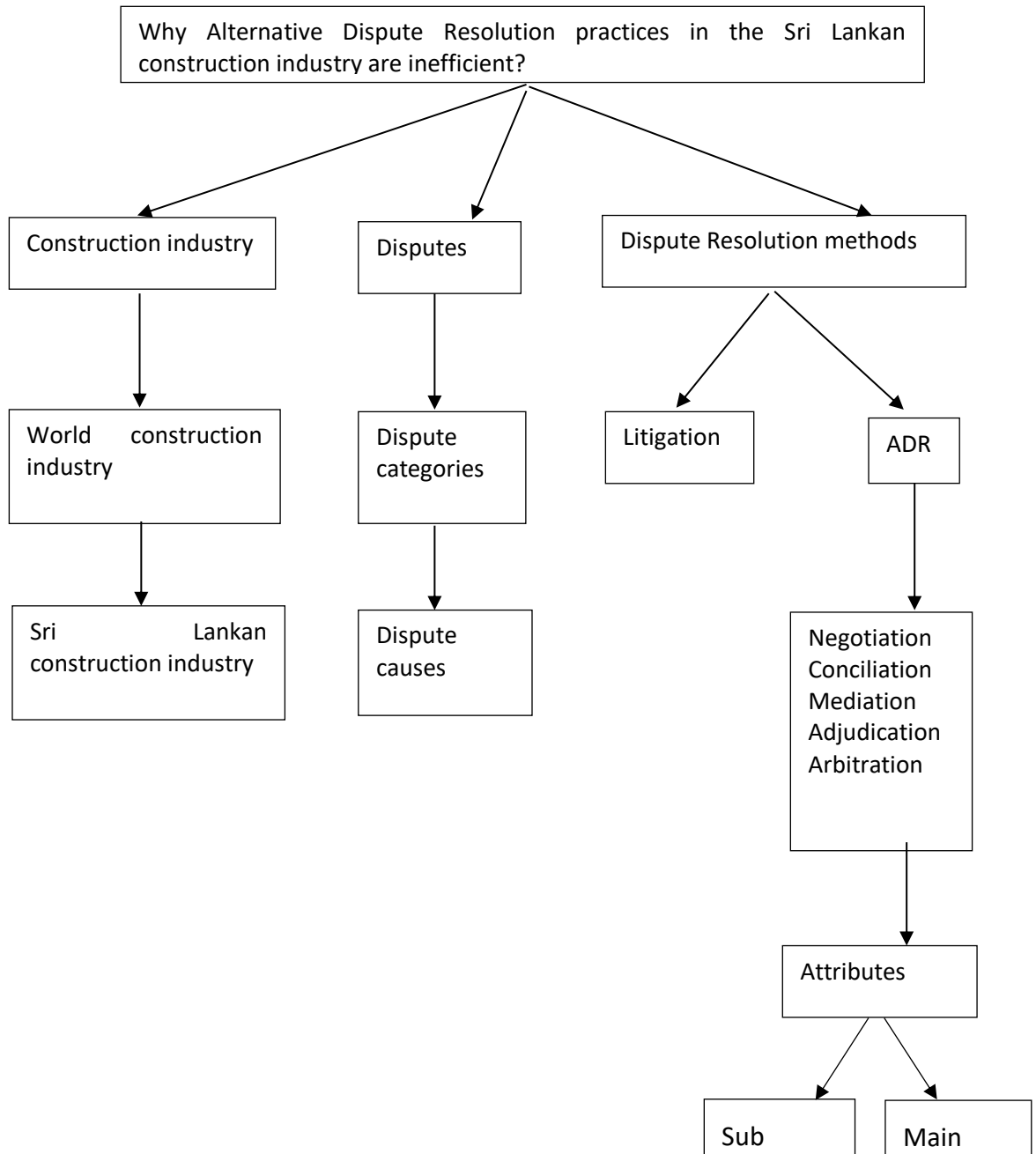


Figure 4 - 3 Literature review conceptual frame

4.6.2 Semi-structured interview

The Interview is a useful tool to obtain detailed information about personal feelings, perceptions and opinions of the participants (Fellow and Liu, 2003). The collected data through the interview enables the researcher to gain deeper appreciation and greater understanding of a particular phenomenon (Denzin and Lincoln, 2008). However, interviews are a major data collection technique in qualitative based studies which enable the researcher to capture the voice of the interviewees and give meaning to their voice and experience (Rabionet, 2011; Bryman, 2001). When the researcher needs to collect investigative information and personalized information on an issue the best method is to interview (Gray, 2006). However, the majority of the qualitative interviews are conducted on a face-to-face basis (Ahmed et al., 2016). Nevertheless, the first set of semi-structured interviews was conducted on a face-to-face basis, but the second set was conducted online due to the Covid 19 pandemic situation. According to Saunders et al. (2009) the researcher can gain several benefits by conducting personal interviews such as;

- Possibility of recording interviewees' non-verbal communication
- Creating a platform to talk about the purpose of the study
- Being able to ask follow up questions to clarify with more details

There are three different types of interviews as examined in Table 4.7.

Table 4 - 7 Characteristics of interview types (Gray, 2006)

Structured interview	Semi-structured interview	Unstructured interview
Mainly for quantitative data Captures data speedily	Mainly for qualitative data Captures data slowly and is time-consuming	Mainly for qualitative data Captures data slowly and is time-consuming
Uses random sampling Uses strict interview format	Uses purposive sampling Uses flexible interview format or schedule	Uses purposive sampling Uses flexible interview format or schedule
Data usually easy to analyse	Data may sometimes be difficult to analyse	Data usually difficult to analyse
Tends to positivist view of knowledge	Mixture of positivist and interpretivist view of knowledge	Mixture of positivist and interpretivist view of knowledge

A Structured interview uses a strict interview format mainly to collect quantitative data (Gray, 2006) and generally it is not possible for an interviewee to freely share their thoughts and

experiences as in a semi-structured interview (McIntosh and Marse, 2015). A semi-structured interview uses an interview guide (Gray, 2006), while an unstructured interview has no guide, which makes it difficult for the interviewer to control the participant's response (McIntosh and Marse, 2015). Hence, a semi-structured interview supports fruitful discussion with a certain order to obtain relevant and required information to achieve the aim of the research (Rabionet, 2011).

In this research semi-structured interviews were conducted during the Phase 1 and 2 (table 4.1). The following section discusses the nature of the semi-structured interviews during Phase 1 and 2 of this research.

4.6.2.1 Semi-structured interview 1 – Phase 1

Phase 1 was formulated to find dispute causes relevant to the Sri Lankan construction industry and their inter-relationship. The semi-structured questions used in phase 1 were guided by the literature review conducted on disputes in Chapter 2. Those literature findings were listed in the interview guide in different sections following the personal information on the participants.

Section 1: Participants' general information

The credibility of the collected data through semi-structured interviews basically relied upon the participants' representation (Saunders, 2012). The participant's information collected here was the profession, role in the business, years of experience, type of business, size of the business, kind of projects involved, scope of operation either local or foreign, contract types and finally contract value.

Section 2: Disputes relevant to Sri Lankan construction industry

Disputes listed and categorized in Chapter 2 were presented to interview participants. Interview discussions were used to know the disputes relevant to the Sri Lankan construction from the presented list. Also interviewees were allowed to present disputes which were not in the table and researcher recorded the reasons for those nominations. Not only that according to the objective 2 of the study interview discussions were used to know the interrelationship among those construction disputes.

The face-to-face interview time planned by the researcher was minimum 45 minutes and maximum 60 minutes. Therefore, the question guide was organized accordingly.

10 interviews were conducted during this stage. However, there were two pilot interviews conducted prior in order to assess the interview guide. Two changes were made during the pilot study and the amended questions were presented to the participants. With the early consent from the participants the researcher was able to record the interviews, and which were later transcribed for the purpose of analysis.

4.6.2.1 Semi-structured interview 2 – Phase 2

Phase 2 explored the ADR practices, applicability of ADR in dispute resolution and the attributes of ADR. The Literature review in Chapter 3 presents main and sub attributes of ADR and 5 common ADR practices used in the Sri Lankan construction industry. The question guide was organized under the following four sections.

Section 1: Participants' General information

Participants' general information was collected on similar areas as interview 1.

Section 2: Dispute resolution methods in the Sri Lankan construction industry.

The section was used to collect information on the commonly practised ADR in the Sri Lankan construction industry.

Section 3: Attributes of ADR

A List of main and sub attributes found in the literature was tabled against the 5 ADR practices in the Sri Lankan construction industry. Then the participants were requested to explain each attribute on current ADR practices in the Sri Lankan construction industry.

Section 4: Best methods to resolve disputes

Having previously identified the causes of disputes through the semi-structured interview 1, these were presented under relevant categories and the participants were asked to select the most suitable ADR method to resolve each category of dispute and to provide a justification.

Due to the Covid 19 pandemic situation face-to-face interviews were impossible. Therefore, with the participants' consent, interviews were conducted through Zoom. The good thing

about the online interviews was the participants committed their leisure time to do the interview and they went on for about 60-90 minutes without being rushed to complete sooner and in a more detailed manner. Unlike in the semi-structured interview 1, there were no changes to the questions after conducting the first couple of interviews. However, every participant mentioned that it is impossible to select a suitable ADR method by only referring to the cause of dispute without knowing the nature of the project. Therefore, participants suggested ADR methods for the Sri Lankan construction related disputes based on the current practices in the industry by providing suitable explanations (Chapter 6).

Finally, the recorded interviews were transcribed for the data analysis process.

4.6.3 Case study

This study is mainly dominated by a qualitative methodological approach, as complex real-life issues and their interactions with technology can be easily investigated using this method (Runeson and Höst, 2008). Phase 3 examined existing project cases in the Sri Lankan construction industry to verify the results of the interviews from Phase 1 and 2. The major strength of the case study is to consider the detail, richness and completeness within each case variance (Yin, 2014). Meredith (1998) identifies that case-study methods enable the following;

- A phenomenon can be studied in its natural setting, so that meaning and relevant theory can be generated from the understanding gained by observing actual practice
- The much more meaningful question of why, rather than what and how, can be answered with a full understanding of the nature and complexity of the whole phenomenon
- Where the variables are still unknown and the phenomenon is not well understood, exploratory research can be done
- Richness of explanations and its potential for testing hypotheses in well described, specific situations is possible.

However, both Flyvbjerg, (2011) and Meredith, (1998) identified several disadvantages when adopting a case study approach compared to statistical methods as listed below;

- Small N sample owing to access or time
- Weak understanding of phenomenon
- Occurrence in a population of study
- Selection bias may overstate or understate relations
- Statistical significance is always either unknown or unclear
- Unfamiliarity of procedures
- Need for multiple methods and tools
- Lack of control

The researcher has taken the following steps to overcome those weaknesses in the case study method.

- There are five cases selected with 8 ADR situations.
- Before starting data collection, comprehensive literature analysis was conducted and defined a research question that need to be answered during this Phase. The focus was on collecting data about the ADR attributes represented in the case study along with the independent and dependent variables.
- The control over the case study research was obtained through the pre-arranged list of attributes which the researcher plans to study through the case study.

Yin (2014) identified five components of case study research design which this research made reference to for Phase 3;

1. Study question: The question addressed in the Phase 3 is “What is the status of the attributes of commonly adopted ADR methods in the Sri Lankan construction industry?” As suggested by Yin (2014) the question justifies the adoption of exploratory case study research.

2. Study proposition: During the previous two semi-structured interviews participants have discovered the causes of disputes, their inter-relationship and attributes of ADR. However, through this case study the nature of ADR practices with respect to their theoretical attributes were evaluated. Further, the reason for not being able to achieve the attributes was also explored.
3. Unit of analysis - the “case” - As explained by Flyvberg (2011), ‘case’ in case study research can be a person, a group, an organization, an association, a change process, an event or any other type of case subject. In this study the ‘case’ is defined as one dispute referral. The cases are displayed in table 4.8.

Table 4 - 8 Case studies - Cases

Case number	Nature of the project	ADR method	Agreed/disagreed of the award/decision
1	Building renovation. Client – Public sector Contractor – Private	Mediation	Agreed, but did not work accordingly
		Adjudication	Disagreed
		Arbitration	Agreed
2	Hostel building construction. Client – Public sector Contractor – Private	Adjudication	Disagreed
		Arbitration	Agreed
3	Construction of housing units Client – Public sector Contractor – Private	Adjudication	Agreed
4	Two storied hospital building Client – Public sector Contractor – Private	Adjudication	Agreed
5	Waste water treatment plant Client – Public sector Contractor – Private	Adjudication	Agreed

The “cases” started from the dispute referral to an ADR method which escalated to different ADR practices due to the disagreement on decisions/ awards. Therefore, altogether 8 ADR

situations were discussed during the case study. They were selected and studied with the purpose of achieving the answers to the case question and proposition.

4. Linking data to propositions – As shown in Table 4.8, within each case there are several ADR solutions. First, each individual solution was considered and then the analysis was done within the case itself. Finally, cross-case analysis was conducted to develop more logical answers to the case study question. More details on data analysis procedure will be discussed under the ‘case study data analysis’ section.
5. Criteria for interpreting a case study’s finding – The findings of the case study analysis were tabled separately for each ADR situation within the case. The table was filled with the information on attributes of each ADR situation within the case. Finally, cross-case analysis was conducted in a similar manner. The detail on the analysis is presented under the data analysis section.

4.6.4 Questionnaire Survey

As a data collection method, a questionnaire is widely used due to the flexibility, relative cheapness and speed of data collection (Bryman, 2011). Through the questionnaire the researcher can collect data from a larger sample which responds to the same set of questions (Saunders et. al., 2019). However, the questions in the questionnaire method should be designed to addresses the research question adequately (Burgess, 2001). There are several advantages and disadvantages in using questionnaire as a data collection method (Bryman, 2012).

Advantages

1. Low cost even when the universe is large and is widely spread geographically
2. It is free from the bias of the interviewer; answers are in the respondent’s own words
3. Respondents have adequate time to give well-thought-out answers
4. Respondents who are not easily approachable can also be reached conveniently
5. Large samples can be made use of and thus the results

Disadvantages

1. Low rate of return of the duly filled in questionnaires
2. It can be used only when respondents are educated and co-operating
3. The control over the questionnaire may be lost once it is sent
4. It is difficult to know whether willing respondents are truly representative
5. There is also the possibility of ambiguous replies or omission of replies altogether to certain questions
6. This method is likely to be the slowest of all
7. Respondents may misinterpret a question, thereby limiting the validity of the results.

In order to ensure that a questionnaire will provide the researcher with appropriate data then the following factors should be given consideration, (Saunders et al., 2019)

1. characteristics of the respondents from whom you wish to collect data;
2. importance of reaching a particular person as respondent;
3. importance of respondents' answers not being contaminated or distorted;
4. size of sample you require for your analysis, taking into account the likely response rate;
5. types of question you need to ask to collect your data;
6. number of questions you need to ask to collect your data

Phase 1, 2 and 3 of the research identified the status of the attributes of adjudication and arbitration practices in the Sri Lankan construction industry; these were used to initiate the development of the framework for improving the efficiency of adjudication and arbitration practices in Sri Lanka. However, as per the research design the Phase 4 (table 4.1) survey questions were needed to analyse the Sri Lankan construction industry specific aspects that relate to the successful implementation of adjudication and arbitration from a larger sample. The framework development started with the outcome received through qualitative data analysis. However, the researcher wanted to confirm those outcomes and several other related questions through a questionnaire in order to refine the framework.

Vikat et al., (2007), identified that firstly researchers should agree on the questions to be asked, then encode their request for information to the question, where respondents

subsequently decode this and encode an answer. Finally, the researcher decodes the responses and starts analyzing the given information. It is important to focus on question length, question wording and question order (Lietz, 2010).

Roopa and Rani, (2012) found that a questionnaire should be planned in several stages (figure 4.4).

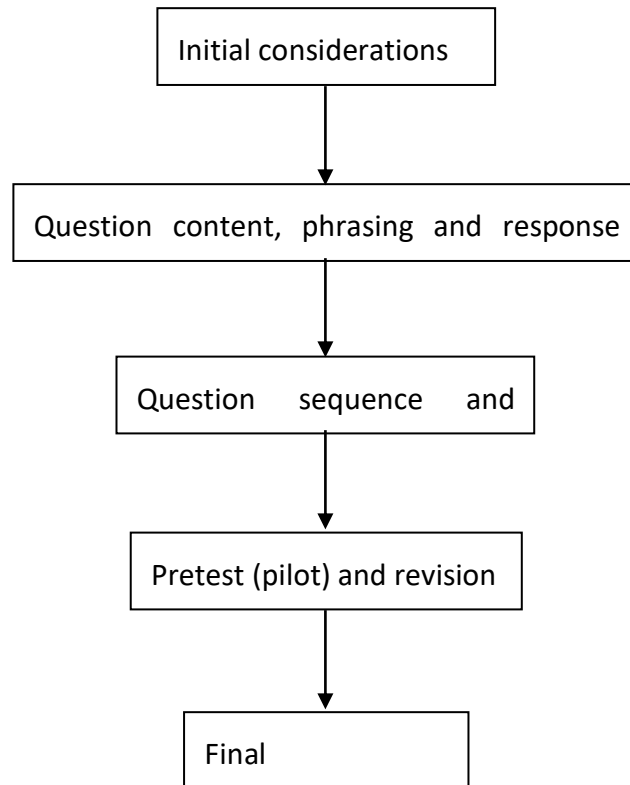


Figure 4 - 4 Stages of planning a questionnaire (Roopa and Rani, 2012)

At stage 2 when preparing the questions the following should be considered (Lietz, 2010);

- Question length – it was advised to keep the questions or statements simple and short.
- Grammar –it is better to minimize grammatical complexities in a question.
- Specificity and simplicity – it is easy for the respondents to grab the question when the question is specific (Dillmann, 2000). Similarly, avoiding complex words and general

phases will help the participants to respond easily with the most suitable answer as per their view.

- Double – barrelled questions – Preparing questions without multiple verbs. This will avoid including two concepts in one question.
- Negatively worded questions – These types of questions prove less reliable than positively worded questions.

Once the questions were set for this research the order of the questions was decided. A filter question was included which allowed the participants to leave the survey at the beginning of the survey should they feel they did not have sufficient experience in ADR to respond to the questions. The survey in this study was set up as follows:

Demographic Data

To show the reliability of the data it is important to collect the participants' demographic data. Participants were allowed to select their role, experience, type of organization and annual turnover from a dropdown menu.

A filter question was included at the beginning of the survey to allow the participants to leave if they were unaware of ADR methods and practices.

Questionnaires in this study were targeted to reveal the view of a larger sample in relation to;

- Disputes referred to adjudication or arbitration
- Reasons to use adjudication or arbitration
- Adjudicator qualification
- Arbitrator qualification
- Adjudication process
- Arbitration process
- Adjudication cost components
- Arbitration cost components
- Acceptance of adjudication decision
- Acceptance of arbitration decision

The study aims to develop a framework to improve the ADR practices in the Sri Lankan construction industry and the questionnaire was arranged to fill the gaps of the qualitative study in relation to each main attribute as discussed.

Process

Questions under this were aimed to identify any dispute which cannot be resolved through adjudication and arbitration and the reasons used to refer disputes to adjudication/arbitration. The purpose of having these questions was to screen the number of disputes proposed to refer to adjudication or arbitration. This could then be used in the framework to alert parties to whether the referred dispute can be resolved through adjudication or arbitration. In addition, it can provide clarity on when to refer to arbitration. As an example, parties should refer to arbitration when adjudication fails unless otherwise stated in the agreement.

The set of steps identified during the case study was listed here to be added to or commented on those by the participants. Last question aimed to know the participants' views on upgrading adjudication into statutory adjudication.

Neutral Third

The neutral third party's preference on the number of disputes to be contained in the referral was the first question included here. With reference to the case studies the qualification of the adjudicator/arbitrator was listed and verified through questionnaire.

Settlement

The respondents' acceptance of the adjudication/arbitration decision was tested here. Further, respondents could freely comment on the reason for rejecting decisions.

Benefits

Through the qualitative data the high cost and the time consumed by adjudication and arbitration was identified. During the survey participants came up with different reasons for that.

The survey was initially tested with two industry professionals as a pilot survey after which several questions were rephrased. After addressing the corrections, the survey was launched and kept open for 27 days. The survey link was circulated via email to the participants.

4.7 Data sampling strategy

A Sample can be defined as a group of people in a study (Thompson, 1999). It is expensive and impracticable to collect and analyse all potential data available for the study (Saunders et al., 2019). There are several types of sampling methods available for researchers to use based on the study. In this section the sampling techniques adopted in this study will be discussed based on the research approach.

The commonly used sampling technique in quantitative study is probability sampling (Thompson, 1999). In probability sampling every element in the population has a known probability to be included in the sample (Wilson, 2014). However, there are three concepts relevant to probability sampling such as sampling error, random sampling and sampling bias (Thompson, 1999).

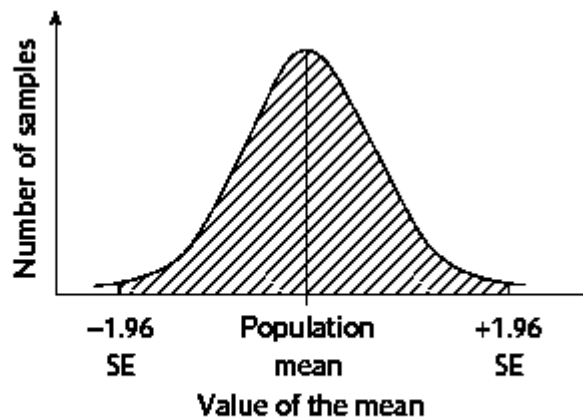
Sampling error – The gap between study sample and the population is called the sampling error. Sampling error is available in every probability sample. When the sampling error is less the outcome of the study is closer to the population. The sampling error will decrease when the sample size increases.

Random sampling – There are several types of random (probability) sampling techniques as discussed below (Saunders et al., 2019).

- Simple random – Every individual in the sampling frame has an equal and independent chance of being chosen for the study.
- Systematic random – Choosing individuals from a list by selecting every 'k'th sampling frame member, where 'k' typifies the population divided by the preferred sample size.
- Stratified random – Sampling frame is divided into sub-sections comprising groups that are relatively homogeneous with respect to one or more characteristics and a random sample from each stratum is selected.

- Cluster – Selecting intact groups representing clusters of individuals rather than choosing individuals one at a time.

If the sample is sufficiently large the differences between the sample and population will be less. This can be shown using sampling error and confidence interval. The specific range of value in which the population lies is called the confidence interval (social research method). As an example, 95% confidence interval can be described using Figure 4.5.



Notes: 95 per cent of sample means will lie within the shaded area. SE = standard error of the mean.

Figure 4 - 5 Normality Graph (Saunders et al., 2019)

As shown in the figure 95% of all the sample means will lie between + or – 1.96 Standard error from the population mean.

Sampling bias – Sampling bias will occur when the sample does not represent the population (Thompson, 1999). Tuckett and Stewart (2004) suggested that sample selection bias can be minimized by applying different techniques of data collection.

Unlike in quantitative research, qualitative research studies aim to have a deeper understanding of the concepts and contribute with broader theoretical understanding (Thompson, 1999). The qualitative study focuses on theoretical generalization rather than statistical inferences. In that sense, qualitative study is mostly conducted using non-probabilistic sampling techniques (Creswell, 2018).

There are different types of non-probabilistic sampling techniques which include:

Purposeful sampling – Researcher selects information rich samples which enable them to obtain greater detail of information about the study (Patton, 1990).

Convenience sample – Researcher selects the most reachable samples for the study (Wilson, 2014). This sampling technique will be less demanding in terms of costs, time, and effort. However, there is a risk of gathering poor quality data, resulting in poor research outcomes making it difficult to convince others to accept the findings of the research (Oppong, 2013).

Snowball sampling – The required number of the sample is generated by starting with a few people and asking them to recruit more people for the study (Wilson, 2014).

Quota sampling – Even though quota sampling is a non-probabilistic sampling technique this can be taken as an alternative to the probabilistic sampling technique (Saunders et al., 2019). The Quota sample reflects the population in terms of the relative proportions of people in different categories (social research).

The greater challenge in qualitative sampling is to know the sample size (Oppong, 2013). The sample size will be determined by the research objectives, research finding and the expected outcome (Patton, 2015).

4.7.1 Interview sampling

In this study the researcher used a qualitative approach in three different phases (Table 4.1). In phase 1 the researcher aims to identify the causes of disputes and interrelationship between those causes in the Sri Lankan construction industry. Even though many researchers examined the causes of disputes, the definition of those causes and their interrelationships was not examined closely. Therefore, the researcher used semi-structured interview as a data collection method in phase 1 to gather data in relation to this. A similar approach was adopted in phase 2 in order to examine the ADR procedure and its attributes along with the relationship between the ADR process and dispute causes in the Sri Lankan construction industry. In phase 5 a qualitative approach was used for focus group discussions which will be discussed in later sections of this chapter.

Purposeful sampling strategy was used in both interviews in phase 1 and phase 2. Since ADR is a specialized area within the construction industry, the researcher had to purposely select the interviewees based on several criteria. Those criteria were;

- more than 10 years of experience in ADR
- appeared as an adjudicator, witness or a representative of disputing party
- Experience in working in state owned projects using SBD form of contract.

Semi-structured interview 1 was conducted using a sample of 10 CIDA registered adjudicators. The sample includes 4 consultant Quantity Surveyors (QS), 4 consultant engineers (CE), 1 architect and 1 lawyer. Each participant had between 12 and 46 years of experience, with a mean of 33 years of experience in the Sri Lankan Construction Industry.

Semi-structured interview 2 was conducted using a sample of 8 Arbitrators/ Adjudicators (AA), and 12 industry practitioners, representing consultant engineers (CE), consultant quantity surveyors (CQS), consultant architects (CA), and senior engineers (SE). All the participants have 13-56 range of years' experience and are working in high level positions in their construction organizations, in Sri Lanka.

Since there was an element of judgemental approach in the sample selection in both interviews, participants came from the Sri Lankan construction industry with expertise knowledge and experience in ADR. The advantage of this approach lies in finding rich data useful to achieve the research objectives. Further, the first set of interviews was conducted in their office environment; participants were comfortable and freely expressed their experience on dispute causes and the interrelationships in the Sri Lankan construction industry. Data collection was concluded when the researcher received adequate answers to the research questions.

The second set of interviews was conducted via zoom due to the Covid – 19 pandemic situations. However, participants gave more time for the semi-structured interview 2 since the sites were closed and there were fewer disturbances. 20 interviews were conducted in the semi-structured interview 2.

4.7.2 Case study sampling

In phase 3 the case study focused on examining the cost components of most commonly used ADR practices. As discussed previously, the five case studies were taken from three Construction Industry professionals who work as arbitrators/adjudicators. They are the leading arbitrators/adjudicators in the construction industry who are involved in resolving most of the construction disputes in Sri Lanka. They have provided two case studies each for this research study. While discussing the background information about the cases Stakeholders' names, project names and location of the project were not disclosed for confidentiality reasons.

4.7.3 Survey Sampling

Survey results reveal 83 responses were obtained through convenient sampling methods. There were 50 emails delivered to CIDA registered adjudicators and chartered qualified engineers, QS and architects of the construction institutes in Sri Lanka. Even though there are 57 in the registered list 07 of them were not being able to contact due to their personal reasons. Through emails, the researcher requested they forward the survey to construction industry professionals who have knowledge and experience in construction dispute resolution methods, particularly in Sri Lanka. To filter the participants for the survey, a question was inserted on knowledge of dispute resolution in the Sri Lankan construction industry and only if the response was "Yes" the participant allowed to proceed with the survey. However, there was not a single filtered out participant in this data collection method. It is because even though the convenient sampling method was adopted, selecting the individual participant was conducted through the judgemental method and snowballing.

The population under this study can be categorized into two groups. Those are the adjudicators/arbitrators who lead the ADR and the rest of the construction industry professionals who use ADR to resolve their disputes. When it comes to the user of ADR, either the engineer, QS or architect will represent the client and contractor. Therefore, the two groups referred in this study are as follows.

Group 1 – adjudicator/arbitrator

Group 2 – Engineer, QS, Architect

The population of two groups are listed in Table 4.9. The list of CIDA registered adjudicators is 57. In Group 2 each professional group population was listed in the table below.

The Group 1 sample number 50 counted by taking the freely available adjudicator/arbitrator information from CIDA. The Group 2, 50 numbers were determined through the professionals who are having experience and knowledge in ADR. However, questionnaires were distributed among 150 (Group 1- 50, Group 2-100) participants for the purpose of receiving 100 responses. The interview responses received were 83 including 35 from Group 1 and 48 from Group 2.

Table 4 - 9 Sample selection

Strata		population	Total	Questionnaire distributed	Returned responses
Group 1	Adjudicators/arbitrators	57	57	50	35
Group 2	Chartered qualified Engineers (Iesl.lk, 2022)	3519	5888	50	48
	Chartered Qualified Quantity Surveyors (Iqssl.lk, 2022)	803			
	Chartered Qualified Architects (Architectssrilanka.org, 2022)	1566			
	Total		5945	100	83

4.8 Data Analysis methods adopted in this research

The aim of the semi-structured interviews was to investigate the meanings and interpretations of industry professionals and academics in relation to the study whilst the case study was used to examine the multiple meanings and interpretation of real-world cases. Finally, through the survey results the researcher interpreted and explored a phenomenon relevant to the study. The data from each collection method adopted was then analysed using NVivo and SPSS research tools as discussed in the following section.

4.8.1 Data analysis method – Semi-structured interviews

Both semi-structured interviews 1 and 2 provided a source of well grounded, rich descriptions and explanation of the process in a Sri Lankan context. One of the popular methods in analysing qualitative data is 'Thematic analysis' (TA) (Saunders et al., 2018). This method was used to identify, analyse and report patterns within the data from both semi-structured interviews. The process of TA can be categorized into five steps: compiling, disassembling, reassembling, interpreting, and concluding (Castleberry and Nolen, 2018). Application of TA with respect to each step is described as follows.

Compiling: Compiling data into a useable form.

Interview recordings were transcribed allowing the data to be clearly seen. Data transcribing was done with the help of an expert person. The researcher read and re-read to check the accuracy and for data familiarization. After that the interview data was compiled.

Disassembling: Data separation.

Data separation was done by creating meaningful groupings of the data via coding. Themes identified in each interview were as follows.

- Semi-structured interview 1 – The compiled data was separated into participants' general information, disputes and other. Since the focus of this study is to identify the causes of disputes relevant to the Sri Lankan construction industry, keeping the dispute related data separately enabled the data to be easily interpreted whilst the participants' general information provided the value and reliability of the collected data.
- Semi-structured interview 2 – The compiled data was initially separated into participants' general information, ADR and disputes and then further separated into 5 different types of ADR listed in the semi-structured interview guide along with the attributes and types of disputes. Data relevant to each group was coded under those groups using NVivo 14 software.

Reassembling: Create themes using coded concepts.

The separation of data into relevant groups using NVivo 14 enabled the creation of themes that supported the identification of patterns in the data.

- Semi-structured interview 1 - Initially two themes were created; dispute categories and causes of dispute. Through the literature findings 9 disputing categories were identified which after the pilot survey were further categorized into 8. The identified dispute causes were coded under the relevant categories and checked for the frequency of the cause.
- Semi-structured interview 2 – Grouped data was coded into the separate themes of ADR, main attributes, sub attributes and disputes. Under ADR there were five high level themes created along with mid and low-level themes of the sub attributes of ADR. Disputes were coded under a separate high-level theme.

Interpreting: Creating a thematic map identifying patterns across codes and themes.

Yin (2014) identified five qualities which a completed interpretation should have:

- 1 The reader should be able to see the beginning, middle, and end of how the interpretations were drawn.
- 2 Interpretation should be fair and enable others to reach the same interpretation if given the same data.
- 3 Interpretation should be accurate and represent the raw data.
- 4 In the context of current literature, good studies will add value to the relationships.
- 5 Data methods and subsequent interpretations should be credible.

Descriptions and inter-relationships of the disputes relevant to the Sri Lankan construction industry were found by interpreting the interview data in the semi-structured interview 1.

The semi-structured interview 2 data was collected and interpreted to explore the dispute resolution methods practised in Sri Lanka based on its attributes and the appropriate ADR method to resolve the disputes identified in interview 1.

Concluding: Making decisions through interpreted data.

By interpreting the data in semi-structured interview 1 the researcher was able to develop the interrelationships between the causes of disputes in the Sri Lankan construction industry. From the semi-structured interview 2 the current standard of ADR practices in Sri Lanka was identified and the relationship between the disputes and ADR was formulated.

4.8.2 Data analysis method – case study

Case study research is an investigation and analysis of a single or collective case, intended to capture the complexity of the object of study (Stake, 1995). Even though case study research approach is used extensively in qualitative studies it does not have well-defined and well-structured protocols (Yin, 2014). This research investigates the practical application of ADR in the Sri Lankan construction industry with respect to the dispute causes and ADR attributes. With that understanding the researcher further analysed the attributes of ADR using an actual world scenario by adopting a case study analysis. Specific case studies were used to facilitate the collection of rich data in order to understand every possible aspect of ADR practices in the Sri Lankan construction industry. In this study the case study analysis was conducted based on the available documents specific to each case. Therefore, the instrument used in this study was these documents (Saunders et al., 2018).

The research question is ‘Why is ADR unpopular in the Sri Lankan construction industry?’ The data collected through case study documents was mainly focused on the attributes of the ADR practices. The ‘case’ defined in this study is the ADR methods applied in each case study. As an example, case study 1 includes three cases: mediation, adjudication and arbitration. The information from each case was collected and compiled under the following themes using Excel.

- Procedure
- Main attributes
- Sub attributes

The collected data was first analysed individually and listed in separate tables in chapter 7 and then cross case analysis was conducted.

4.8.3 Data Analysis – Survey questions

The Phase 4 data collection was conducted through a survey with the set of questions arranged to gather the following types of data as explained by Field (2018).

- Nominal data – The question was arranged to collect information on the interviewees' position in the construction project such as; adjudicator, arbitrator, engineer, quantity surveyor, architect or any other. Arbitrarily assigned numbers were given to each category (Eg. Adjudicator = 1).
- Categorical (Ordinal) data – There were several questions presented in this manner and the interviewees were asked to rank the answers to the question based on the frequency of occurrence and the impact to a variable.
- Numeric (scale) data – This type of data can be further categorized into continuous and discrete data. Both data include numeric value. Numeric data was collected to know the suggested time period for each steps in the adjudication/arbitration procedures.

The Bristol online survey platform was used to formulate the questions. The survey received 83 responses and was converted to SPSS file format for analysis. Since the sampling method adopted was non-probabilistic the non-parametric tests were used in analysing data using SPSS (Shapiro and Wilk, 1965; Razil and Wah, 2011).

The sample determined for the survey questions was divided into two groups. Since the groups are independent groups the Mann-Whitney U test (Field, 2015) was used. Apart from the statistical questions there were open ended questions which allowed the participants to freely comment on their selections. This data was separated and inputted into Excel and discussed in the data analysis per strata in order to identify different opinions across the strata with respect to their understanding on construction disputes and dispute resolution methods.

4.9 Focus Groups

A Focus group is a qualitative technique which comprises a small group of people holding a discussion on a given topic (Anderson, 1990). When it comes to research, the researcher should act as the moderator to the focus group and explore attitudes and perceptions, feeling and ideas about the topic (Dilshad and Latif, 2013). Morgan (1997) identified the following types of focus group:

- Self-contained Method: As the chief source of data collection method.
- Supplementary Source of Data: As the preliminary data collection method.
- Multi-method Studies: Conjunction with other collected data. As a triangulation method.

In this study the data has been collected through the literature review, semi-structured interviews, case study and survey questions; this data was then used to develop the framework and the focus group was used to validate it by triangulation.

Denscombe, (2007) discussed the following characteristics of a focus group.

- Prompt/Stimulus: The Moderator will introduce the issue for the focus group to discuss at the beginning of the session.
- The Moderator is not a Neutral Person: The Focus group is conducted in a similar way to any other interviews in research.
- Interaction within the Group: While doing the focus group discussion, interaction among the participants is very important other than aggregated views.

4.9.1 Focus group design

The idea of a focus group is to collect the experience and views of a certain group of people in a relatively unstructured manner (Byran, 2016). However, to ensure the focus group members attention was on the framework, the researcher prepared a few questions in accordance with the guidelines established by Anderson, (1990).

The researcher in this study planned to conduct the focus group discussion via the Zoom platform due to the pandemic situation in the country. Participants were contacted in advance and made aware of the objective of the activity and were mailed the prepared framework with the framework guide and they were requested to refer to it before attending the discussion.

4.9.2 Focus group sample

Focus group discussion needs to have at least four participants who are in a suitable position to provide the desired information on the topic (Krueger, 1994). However, Krueger & Casey (2000) suggested between six and eight participants are a suitable number in a focus group. This study used six participants, three each from adjudicator/arbitrator and three from a group of engineers and quantity surveyors.

Group selection was conducted based on non-probabilistic purposive sampling in order to select the most suitable persons to be included in the discussion.

4.9.3 Focus group participants

Recruiting participants for a focus group can be challenging (Rabee, 2004). This study required participants to be knowledgeable and experienced in this area of research. The three arbitrators/adjudicators had more than 20 years of experience in the ADR field, two are professionally qualified engineers and one a lawyer and all are registered adjudicators at CIDA. The other set of participants are two quantity surveyors and one engineer all of whom have more than 20-25 years of experience in the Sri Lankan construction industry. The engineer is

working as a project manager in a leading construction company in Sri Lanka, one of the QS is working in the government sector construction institute and the other is a consultant QS.

Before finalizing the focus group members, the researcher contacted them to discuss the format and representation of the focus group. However, through the individual discussions the researcher found the majority of them were unwilling to work alongside other professional groups. According to (Hettiararchchi and Jayarathna, 2014) there is a significant impact of work- related attitudes on job performance of the employees in Sri Lanka which resulted in the focus group being split into 3 groups. as follows;

- Group 1 – Adjudicator and a lawyer
- Group 2- Adjudicator and a QS
- Group 3 – Engineer and a QS

Table 4 - 10 Focus Group participants' profile

Group no	Participant	Role in Business	Years' experience	Business Type
Group 1	Adjudicator /Arbitrator	Consultant	40	Consultation
	Adjudicator	Attorney at law	45	Adjudicator/Academic
Group 2	Adjudicator	consultant	25	Adjudicator, Arbitrator and a lecturer
	Consultant Quantity Surveyor	Consultant	21	Pre and post contract works. Contract Administration
Group 3	Consultant Engineer	Consultant Project Manager	20	Project Management Consultancy firm, structural design
	Consultant Quantity Surveyor	Director	25	Architectural & Cost Consultancy company. Providing from inception to closeout any type of projects consultancy services

Discussions started with Group 1. Group 1 came up with several suggestions which did not change anything in the original framework. The researcher then met with Group 2 and after having the discussion on the original framework the researcher presented the suggestions on the framework by the Group 1. However, the majority of the suggestions given by Group 2 were similar to those from Group 1. The feedback from Group 2 was then given to group 1 for

their comments. This procedure was then repeated with Group 3. Finally, all groups were provided with a summary of the focus group suggestions which were all found to be similar in theme.

4.9.4 Recording and transcribing

Since the focus group discussions happened in three sessions the recorded data was transcribed by the researcher. After transcribing the new ideas presented by the participants those were again presented to other groups to get their views.

4.9.5 Data Analysis

Out of the several data analysis methods in qualitative study this research used the analysis method discussed for focus group by Krueger (1994) and the analysis was not in a linear form (Babiee, 2004). While transcribing the data from the 3 individual focus groups the researcher was able to go back and forth with the raw data and the interviews and undertook thematic analysis in order to identify key themes (Krueger, (1994).

The next stage of the thematic analysis was to create a thematic framework which changed slightly after each focus session. During the third stage of the analysis, the data was indexed to the original framework to see whether the participants' suggestions are logical or not before applying them to the framework. Finally, the original framework was improved by incorporating the suggestions given by the participants through the focus group discussion.

4.9.6 Validation strategy and reliability

Validation is the process of verifying research data, analysis and interpretation to establish their validity/credibility/authenticity (Saunders et al., 2018). There are two validation techniques: triangulation and participants' validation. Interpretivists use triangulation to add depth, breadth, complexity and richness to research (Denzin and Lincoln 2018). In this study

the Focus group discussion and analysis was used to validate the collected and analyzed data from the four phases of the study using triangulation.

4.10 Ethics

This research gained ethical approval from the Research Committee of Liverpool John Moores University June 2019. The documents adopted during this research and approved at the committee can be found in APPENDIX 1.

4.11 Chapter Summary

The chapter discussed the methodology used for this research study by introducing and establishing the suitability of the choice in obtaining the aim and objectives of the research. There were three qualitative data collection strategies used including focus group and a Survey questionnaire was also adopted which was analyzed both quantitatively and qualitatively.

CHAPTER 5

5.0 Results Phase 1 – Interview Data

5.1 Introduction

There are four phases of data collection as identified in chapter 4. This chapter presents Phase 1, the qualitative results collected through semi-structured interviews to achieve objective one, the causes of disputes in the Sri Lankan construction industry and their inter-relationship. The collected data is presented in eight different sub-themes representing the dispute categories. This chapter will discuss these themes and the links that have been identified between them. Phases 2-4 will be discussed in chapters 6, 7, and 8.

5.2 Results – Causes of Disputes

The semi-structured interviews with 10 construction industry specialists on ADR were carried out both in English and Sinhalese to enhance the quality and flow of their responses. A sample of the semi-structured interview questions and transcripts are included in Appendix 1.

The semi-structured interviews were conducted through a mixture of open and close-ended interview questions. Interviews were held face to face and lasted approximately 45 minutes. Interviewees were asked to comment on each dispute in terms of their understanding of each, their relevance to the Sri Lankan construction industry, and their potential for categorisation. Questions are arranged under the pre-identified high level-themes (Dispute categories) and mid-level themes (causes of disputes) listed under each high-level theme. Those high-level-themes are Owner related, Contractor related, Consultant related, Design related, Contract related, Human behaviour related, Project related, and External Factors related. Data was entered into Nvivo 14 to see the interrelation between dispute categories and causes. Tables

5.1 – 5.8 summarise the responses and identify mid and high-level themes by ranking them according to a frequency count using Excel formulas.

5.2.1 Owner related disputes

Table 5.1 presents the disputes identified under the breakdown of each of the causes of disputes under the category of “Owner related” resulting from Phase 1 of the data collection. A brief description of each dispute cause is discussed below. CQS 1 agreed on all presented disputes, whereas six interviewees agreed on nearly half of the disputes. However, CQS 3, CQS 4, and CA 1 agreed to only 4 disputes.

It is apparent from the table that, nine out of ten interviewees confirmed that “variations initiated by the owner” and “payment delay” are the main causes of disputes under owner related. A brief description of each dispute cause is discussed below.

Table 5 - 1 Ranking of the Owner Related Causes of Disputes

No	Owner Related Examples of the cause of dispute	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE 3	CL 1	Yes	Position
1	Variations initiated by the owner	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	9	1
2	Payment delays	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	9	1
3	Change of Scope	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	8	3
4	Financial Failure of Owner	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	7	4
5	Suspension of Work	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	7	4
6	Non-Payment of Changes	Yes	No	No	No	No	Yes	Yes	Yes	No	Yes	5	6
7	Confusing Requirements of Owner	Yes	Yes	No	No	Yes	No	No	No	Yes	No	4	8
8	Owner Furnished Materials and Plant	Yes	No	No	Yes	Yes	No	No	No	Yes	No	4	8
9	Late Giving of Possession	Yes	Yes	No	No	Yes	No	No	No	Yes	Yes	5	6
10	Unrealistic expectations	Yes	No	No	Yes	No	No	No	No	No	No	2	10

	Yes	10	5	4	4	7	6	6	4	7	7		
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Variations initiated by the owner – EA1 explained that variations are there to complete the work to meet the client’s objectives, which may have changed since the start of the project.

CQS 4, claimed variation is the matter which needs to be identified by the engineer as a change to the original contract. In contrast, CE 1 and CE 2 did not recognize variation as a dispute and suggested resolving any matter arising from variation by referring to the contract agreement.

Payment delays– Six interviewees explained that the “payment delay” interpreted by the owner and contractor are different. The owner claimed that the contractors did not raise the invoices on time, whereas the contractor claimed that the engineer delayed issuing the payment certificate. However, CE 3 explained that when the payment is delayed, the contractor will face several difficulties such as failing to finance the project and failing to pay the loan amount, including interest, which ultimately leads to the financial failure of the contractor.

Change of scope – Both EA 1 and CE 3 explained that if the owner changes the project’s initial scope, it can be considered a breach of contract as stated in the contractual clauses. Additionally, CE 1 explained that inadequate investigations are the major reason for scope change in the project.

Financial failure of the owner – Referring to the FIDIC clause 2.4 and SBD clause ‘source of funds’ both CQS 2 and CQS 3 explained that the owner should provide a report on the financial funding of the project. The funding program will enable the contractor to have confidence in the client’s ability to pay for the project, ensuring the project's continuation.

Suspension of work – CQS 4 did not believe that suspension of work is a dispute cause in the Sri Lankan construction industry. Adding to the same CA 1 explained that parties to the contract should refer to the relevant clause of “suspension of work” in the contract agreement. However, seven out of ten interviewees argued that determination on the payment for work done, retention money, and releasing performance bonds, are several issues that parties cannot handle by themselves in “suspension of work” related disputes.

Non-payment of change – The interviewees such as CQS 2-3, CE 3, and EA 1 who agreed on “variation initiated by the owner” as a dispute cause do not believe that there will be issues in processing the payment for the changes in the project. CQS 4, argued that if there were any changes to the project, the owner is responsible for paying for those changes. He further argued that if the owner fails to pay it can be considered a breach of contract. However, half of the interviewees claimed that especially in public owner projects delay or non-payment of changes is a common dispute.

Confusing requirements of owner – Only 40% of interviewees agreed that the “confusing requirements of the owner” are found mostly in design and build contracts. In contrast, both CQS 1 and CQS 2 explained that the involvement of the consultant in this kind of dispute will not commonly happen in the Sri Lankan construction industry.

Owner furnished materials and Plant – As indicated by CE 3, when the project owner is responsible for providing materials and plant there will be negative and positive outcomes. When the owner provides materials, he can go for his own selections but that could impact the material quality.

Late giving of possession – CQS 1-2 explained that there were owner delays in handing over the site for construction especially for road projects in Sri Lanka. Additionally, CE 3 claimed that the same issue can be seen in the refurbishment work.

Unrealistic expectations – This is not considered to be a very relevant cause of dispute in relation to the owner as only two out of ten interviewees agreed with it. However, CQS 4 explained that there are instances where owners instruct the contractor to use materials that are not commonly available in the market and set unrealistic completion dates for projects.

5.1.2 Contractor related causes of disputes

Table 5.2 shows the results found in contractor-related disputes. CQS 1 agree on all the presented disputes whereas CQS 3, CQS 4, and CE 3 only agreed on five disputes.

Delays in work progress, sub-contractor inefficiency, and inadequate planning are the three disputes agreed upon by 90% of the interviewees. However, “inappropriate claims by the

contractor” was the least agreed upon dispute according to the data collected. A brief description of each dispute cause is discussed below.

Table 5 - 2 Ranking of the Contractor Related Causes of Disputes

No	Contractor Related Examples of the cause of dispute	CQS1	CQS2	CQS3	CQS4	EA1	CE1	CE2	CA1	CE3	CL1	Yes	Position
1	Delays in work progress	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	9	1
2	Sub-contractor inefficiency	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	9	1
3	Inadequate planning	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	9	1
4	Time extensions	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	8	4
5	Quality of works	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	8	4
6	Financial failure of the contractor	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	7	6
7	Technical inadequacy of the contractor	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	7	6
8	Non-payment to subcontractor	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	7	6
9	Underquoting	Yes	No	No	Yes	No	Yes	Yes	No	Yes	Yes	6	9
10	Major defects in maintenance	Yes	No	No	No	Yes	Yes	Yes	No	No	Yes	5	10
11	Inappropriate Claims	Yes	Yes	No	No	Yes	No	No	No	No	No	3	11
	Yes	11	9	5	5	9	10	10	6	5	8		

Delays in work progress – Except for CE 3, all other interviewees agreed that “delays in work progress” is one of the major dispute causes under the category ‘contractor related’.

Sub-contractor inefficiency – As explained by both CE 3 and CQS 3 the subcontractor selection can be done either by the owner or the contractor with the owner's consent. Therefore, it is the responsibility of both the contractor and owner for the subcontractor's poor performance in the project. However, it was agreed by 90% of the interviewees as a major cause of dispute relevant to the contractor.

Inadequate planning – 90% of the interviewees agreed that inadequate planning is a major cause that leads to many other disputes related to the contractor. Concerns were expressed to use suitable planning tools to avoid disturbances and disruptions to the project performance.

Time extensions – CQS 3 explained that there are three categories of delays: (a) Culpable delay (no time extensions or cost), (b) Excusable but not compensatable delay (e.g.: adverse weather conditions), (c) compensatable excusable delays (employers own delays). Concurrent delay is the occurrence of any of the above delays together during the same time. If the contractor claims for culpable delay, it will become an improper extension of time claim (EA 1). However, an extension of time (EOT) claim is an entitlement of the contractor (CQS 4). CQS 4 further explained that if the owner did not act fairly, it will become a breach of contract.

Quality of works – Both CE 1 and CE 2 discussed two types of defects: patent defects (by looking from the outer appearance defects can be seen) and latent defects (after sometimes defects will appear). In contrast, CQS 4 and CE 3 did not agree that the quality of work was a cause of dispute, stating that every project should have a quality assurance system to identify the defects and defect rectification.

Financial failure of the contractor – CQS 4 suggested requesting information on the financial ability of the contractor in the bidding document. Further, CE 1-2 suggested checking that financial information through a technical evaluation committee before the contract award. 70% of interviewees agreed that the financial failure of the contractor can be seen commonly in the Sri Lankan construction industry.

Technical inadequacy of the contractor – There are 7 out of ten interviewees who agreed on the technical inadequacy of the contractor as a dispute cause whereas CQS 3-4 and CA 1 did

not agree on that. According to CQS 3 technical inadequacy of the contractor is not a common cause. However, CQS 4 and CL 1 suggested the technical evaluation committees check the contractor's technical adequacy on the project.

Non-payment to subcontractor – The contractor is responsible for sub-contractor payment (EA 1). The view was echoed by both CE 1 and CE 2 claiming that failure of the contractor to make payments to the sub-contractors will create many other disputes such as delays in work progress and quality of work.

Underquoting – More than half of the interviewees agreed that it is the general practice to award the contract to the lowest bidder. However, CQS 2-3 and CA 1 suggested that the project consultant can use the technical evaluation committee to evaluate the bidding prices and avoid disputes arising out of under quoting.

Major defects in maintenance –Both CE 1 and CE 2 proposed to rectify the major defects in maintenance, using the retention money. However, CQS 3 claimed that the contractor is liable for 6 years even after the defect liability period in Sri Lanka according to the “Prescription Act”. 50% of interviewees agreed that major defects in maintenance are a common cause of dispute in the Sri Lankan construction industry.

Inappropriate Claims – Seven out of ten interviewees argued that the claims should be resolved properly to avoid escalating into a dispute (Acharya and Lee, 2006). However, the same set of interviewees explained it is rare to see inappropriate claims in the Sri Lankan construction industry. In contrast, both CQS 1 and CQS 2 insisted that most of the project quantity surveyors prepare inappropriate claims with the instruction of the contractor which ultimately ends up creating several other disputes.

5.1.3 Design related causes of disputes

The table below illustrates the disputes related to project design. CQS 1 and CQS 2 agreed on all the disputes whereas CA 1 accepted only two.

Except CQS 4 all others agreed on “design errors” as a dispute cause under Design related. “Design changes” obtained the least agreed upon dispute for the Sri Lankan construction industry. A brief description of each dispute cause is presented in the sections below.

Table 5 - 3 Ranking of the Design Related Causes of Disputes

No	Design Related Examples of the cause of dispute	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE 3	CL1	Yes	Position
1	Design errors	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	9	1
2	Quality of design	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	8	2
3	Availability of information	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	8	2
4	Inadequate/incomplete specifications	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	7	4
5	Design changes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	4	5
	Yes	5	5	4	3	4	3	3	2	3	4		

Design errors – CQS 4 argued that design errors should not be accepted, and it is professional negligence and should be dealt with legally. However, from the results, it was revealed that design error is a common cause of dispute in the Sri Lankan construction industry as 90% of interviewees agreed.

Quality of design – Both CE 1 and CE 2 explained that poor quality of design will create many other disputes in construction projects. However, CA 1 argued that there is no chance for disputes related to design quality to arise. But 80% of interviewees argued that the quality of the design can cause disputes in the Sri Lankan construction industry.

Availability of information – CQS 1-3 described there is very little time spent on document preparation in the construction industry and it creates more issues in the information available in the designs. In contrast, CQS 3 and CA 1 claimed that consultants should make sure of the availability of the information in the design which they are paid for.

Inadequate/ incomplete specifications– Except for CE 1-3, all other interviewees agreed that there are many situations of inadequate/incomplete design specifications in the Sri Lankan construction industry. However, CE 1-3 argued that when it comes to the availability of information, design-related specifications are lacking in most of the contract documents.

Design changes – 40% of interviewees agreed that there are several instances that they experienced design changes in the construction projects where it leads to an increase in the project cost and time. In contrast, EA 1 explained that if there is a design change it will surely happen during the design stage of the contract which will not be a dispute between the owner and the contractor of the project.

5.1.4 Contract related disputes

It can be seen from the data presented in table 5.4 that CQS 1 agreed on all the presented disputes whereas CQS 2 agreed on only two dispute causes.

All the interviewees agreed on “ambiguities in contract documents” and “risk allocation” as dispute causes related to the contract whereas EA 1 and CL 1 did not agree to these. Brief notes on all the disputes are discussed below.

Table 5 - 4 Ranking of the Contract Related Causes of Disputes

No	Contract Related Examples of the cause of dispute	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE3	CL1	Yes	Position
1	Ambiguities in contract documents	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	9	1
2	Risk allocation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	9	1
3	Change order negotiations	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	7	3
4	Cost overrun	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	7	3
5	Different interpretations of the contract provisions	Yes	No	Yes	No	Yes	No	No	No	Yes	Yes	5	5
6	Multiple prime contracting parties	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	5	5
7	Form of contract	Yes	No	No	Yes	No	No	No	No	Yes	Yes	4	7
8	Inadequate bid information	Yes	No	No	Yes	Yes	No	No	No	Yes	No	4	7

9	Interpretation of escalation/de-escalation	Yes	No	No	Yes	No	No	No	No	No	Yes	3	9
10	Scope of the contract	Yes	No	Yes	No	Yes	No	No	No	No	No	3	9
	Yes	10	2	6	6	7	4	4	3	8	6		

Ambiguities in contract documents – Except for EA 1 all other interviewees agreed that “ambiguities in the contract documents” is a commonly occurring dispute in the construction industry. However, EA 1 claimed that the fact that the contract has been signed by the parties implies that everyone knows what needs to be done and there should not be any confusion after that.

Risk allocation – Except for CL 1 all other interviewees agreed that risk allocation is a cause of dispute in the Sri Lankan construction industry. It is further explained by both CQS 1 and CQS confirming Jegeas, (2001) in statements such as “the employer transfers the project risks to the contractor through the contract agreement”. Therefore, both suggested that properly prepared contract documents will lead to fewer disputes in a project.

Change order negotiations – CE 1-3 accepted that some excessive and extra work might be needed to complete the project as per the client’s request. In contrast, both CQS 2 and CQS 4 argued that variations are covered by clause 12.2 of the SBD document without considering it as a dispute.

Cost overrun – 70% of interviewees agreed that cost overrun is a commonly seen cause of dispute in the Sri Lankan construction industry. But, CQS 2, CQS 4, and CL 1 suggested that cost overrun is the responsibility of the parties to the contract and should be resolved amicably.

Different interpretations of the contract provisions – 50% of interviewees agreed on different interpretations of the contract provisions as a cause of dispute related to the contract. Hence, both CE 3 and EA 1 argued it is the responsibility of the professionals who prepare the document to make it clear and concise. In contrast, CE 1-2 claimed that it is the responsibility of the consultant to check the prepared document.

Multiple prime contracting parties- The literature of the study explained that disputes will arise when different parties work together for one goal. When it comes to prime contracting

parties, 50% of the interviewees agreed that it will create a dispute in the construction project. However, both CQS 2 and CQS 3 suggested those prime contracting parties should work together by signing a MoU (memorandum of understanding).

Form of contract – only 40% of interviewees agreed that the form of contract will create disputes in the Sri Lankan construction industry. However, CE 1-2 claimed that determining the suitable form of contract for a project needs to fulfill several criteria where there is less opportunity to create disputes.

Inadequate bid information – Only four interviewees agreed that inadequate bid information is a cause of dispute under contract related. In contrast, both CQS 1 and CQS 4 explained that inadequate bid information is there in many major projects. However, bidders have an opportunity to clarify those during the pre-bid meetings.

Interpretation of escalation/de-escalation – 70% of the interviewees suggested resolving any issues arising out of the interpretation of escalation/de-escalation by referring to the price adjustment formula and relevant clauses in the form of a contract. However, both CQS 1 and CQS 4 argued that when it comes to the price it is difficult to come to an agreement amicably.

Scope of the contract- 70% of interviewees did not see the scope of the contract as a frequently occurring dispute. However, under the owner-related disputes change of scope was identified as a frequently occurring cause of dispute in the Sri Lankan construction industry. Therefore, it revealed that changing the scope is commonly seen in construction projects.

5.1.5 Human behavioural related disputes

Table 5.5 illustrates the ranking of human behavioural-related causes of disputes. Unlike other dispute categories, three professionals agreed on all presented six dispute causes. Many have agreed on most of the dispute causes under the human behavioural related category.

Table 5 - 5 Ranking of the Human Behavioural Related Causes of Disputes

No	Human Behavioural Related Examples of the cause of dispute	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE3	CL1	Yes	Position
1	Lack of document communication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	10	1

2	Lack of team spirit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	10	1
3	Unfair behaviour	Yes	No	Yes	Yes	No	No	No	Yes	Yes	Yes	6	3
4	Effects of psychological differences	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Yes	6	3
5	Misunderstandings among participants	Yes	No	Yes	No	No	Yes	Yes	No	Yes	Yes	6	3
6	Adversarial/controversial culture	Yes	No	Yes	No	Yes	No	No	No	No	Yes	4	6
	Yes	6	3	6	3	4	3	3	3	5	6		

Lack of document communication – All the interviewees agreed that a lack of document communication is a dispute cause in the Sri Lankan construction industry. EA 1 explained that one of the reasons behind that is the language barrier, as most of the major contracts contracting language is English. However, CQS 1-4 explained that minor contracts also display the same due to the lack of training in document handling.

Lack of team spirit – All the interviewees claimed that most of the disputes discussed can be resolved by proper communication. Further, parties to the contract should have the willingness to resolve those disputes and complete their common goal. The success of the project is the combined effort of all the parties to the contract. Hence, the contract issue escalating into a dispute and being referred to dispute resolution methods is mainly due to the lack of team spirit between the parties.

As such, interviewees agreed that lack of document communication and the lack of team spirit are the major reasons for all the dispute causes discussed in this study. Those findings are presented in the following Figure 5.1.

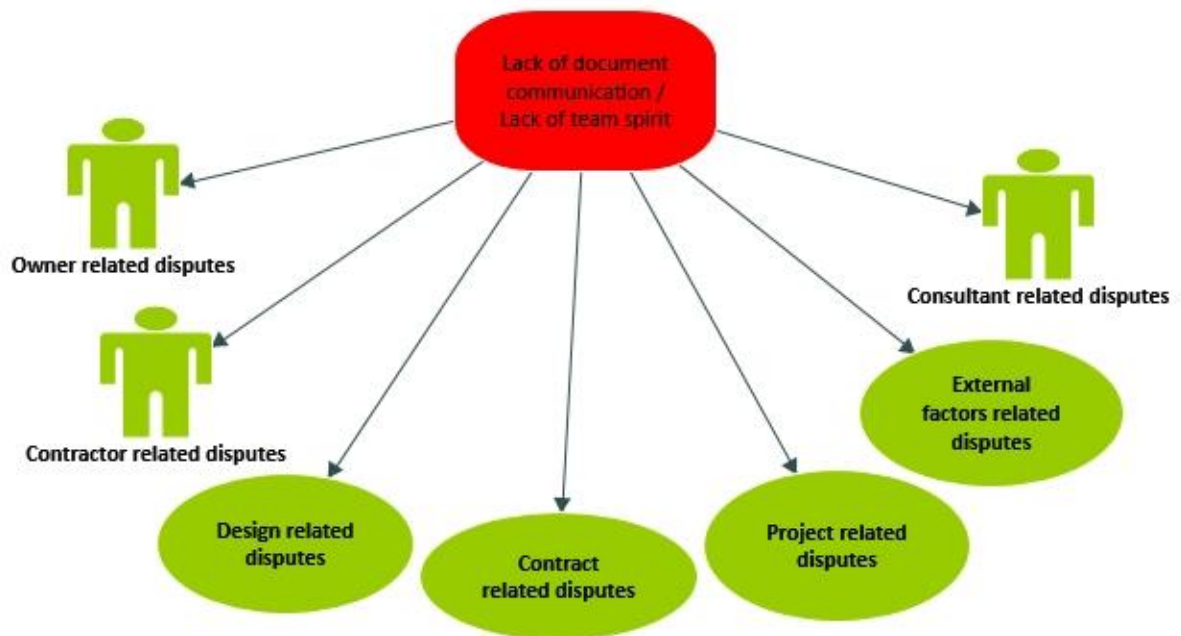


Figure 5 - 1 Disputes Related to - Lack of Document Communication and Lack of team spirit

Unfair behaviour- Both CQS 2 and CE 1 argued that parties are not allowed to act unfairly and should act according to the contract agreement. Including CQS 2 and CE 1, altogether four interviewees did not see “unfair behaviour” as a dispute cause in the Sri Lankan construction industry. In contrast, six other interviewees do agree that it is common to see unfair behaviour of the project participants in the Sri Lankan construction industry.

Effects of psychological differences – CQS 2-3 explained that resolving or escalating an issue to a dispute will mostly depend on the professionals’ attitude and perceptions. 60% of interviewees agreed that psychological differences within the parties create disputes in the Sri Lankan construction industry.

Misunderstandings among participants – 60% of participants agreed that misunderstanding among the parties is a commonly occurring cause of dispute in the Sri Lankan construction industry and it will lead to many other disputes as well. Further, CE 1-2 explained that it is the responsibility of the project representatives to maintain proper communication to avoid misunderstandings among the participants.

Adversarial/controversial culture – CQS 1 stated that most of the project owners try to maintain an adversarial/controversial culture in the project to take control over other parties to the project. It was further confirmed by CL 1 explaining that this culture can be seen mostly in public sector construction projects. However, 60% of interviewees did not agree with that and argued that project participants should work according to the contract agreement not for their own will.

5.1.6 Project-related causes of disputes

Table 5.6 reveals the project-related causes of disputes in the construction industry. Surprisingly CA 1 did not agree with any of the listed disputes saying the consultant should resolve all of them. Except for both CA 1 and CL 1, all other interviewees agreed on the listed disputes in the project related category. A brief note on the disputes related to project is discussed below.

Table 5 - 6 Ranking of the Project Related Causes of Disputes

No	Project Related Examples of the cause of dispute	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE3	CL1	Yes	Position
1	Unforeseen changes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	9	1
2	Complexity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	9	1
3	Site conditions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	8	3
	Yes	3	3	3	3	3	3	3	0	3	2		

Unforeseen changes- Except for CA 1, all other interviewees agreed that any construction project will experience unforeseen issues where it will lead to changes to the project. However, CE 1-2 explained that the unforeseen changes discussed here related to the uncertainty associated with the project life cycle (Atkinson et al, 2006).

Complexity – 90% of the interviewees agreed that the complexity of the project creates disputes. However, CA 1 argued that most construction projects are complex and unique, therefore, consultants can break them into a few phases to reduce the complexity.

Site conditions- Both CA 1 and CL 1 argued that site conditions should not become a dispute, since parties to the dispute come to an agreement to build the project by understanding the particular site conditions. However, 80% of interviewees explained that every day with new projects professionals face new site conditions and it can easily become a cause of dispute unless it is not managed properly.

5.1.7 External factors related to causes of disputes

Table 5.7 presents the ranking of the causes of disputes under the category of External factors related. Out of the nine disputes listed, except for EA 1, all the others agreed on the weather as a frequent cause of dispute in the Sri Lankan construction industry. EA 1 did not agree on the listed disputes claiming all should be handled under the condition of the contract. A brief note on each dispute cause is discussed below.

Table 5 - 7 Ranking of the External Factors relate to Causes disputes

No	External Factors related to causes of disputes	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE3	CL1	Yes	Position
1	Weather	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	9	1
2	Legal and economic factors	No	Yes	No	No	No	Yes	Yes	No	No	No	3	2
3	Labour disputes/union strikes	No	No	No	Yes	No	No	No	Yes	No	No	2	5
4	Market inflation	No	No	Yes	Yes	No	No	No	No	No	Yes	3	2
5	Public disorder	No	No	No	No	No	Yes	Yes	No	Yes	No	3	2
6	Third-party delays	Yes	No	No	No	No	No	No	No	No	No	1	7
7	Act of God	Yes	No	Yes	No	No	No	No	No	No	No	2	5
	Yes	3	2	3	3	0	3	3	2	2	2		

Weather – Except for EA 1 all the others agree on the weather as a dispute cause. Those interviewees further claimed that weather can cause an extension of time and several other

disputes. In contrast, EA 1 suggested the consultant deals with this type of dispute by referring to the condition of the contract.

Legal and economic factors – Both CE 1-2 explained there can be legal and economic issues that arise in any country which can cause a dispute in the construction industry. However, CQS 3-4 argued that the conditions of the contract can be used to resolve those issues amicably.

Labour disputes/union strikes – As explained by EA 1 disputes related to labour or union strikes should be handled through the clauses in the conditions of the contract. Only two interviewees agreed that labour disputes/union strikes can be a dispute cause in the Sri Lankan construction industry.

Market inflation – Both CQS 1-2 suggested rectifying those disputes using the price adjustment formula in the contract agreement. In contrast, 30% of interviewees explained when it comes to price adjustment it normally ends up becoming a dispute.

Public disorder – According to EA 1 public disorder can also be resolved by referring to the conditions in the contract. Therefore, only 30% of interviewees accept public disorder as a cause of dispute in the Sri Lankan construction industry.

Third-party delays – Only CQS 1 agreed on third-party delay as a dispute cause in the Sri Lankan construction industry. He further explained that getting approval from the public sector authorities takes time and will lead to several other disputes. In contrast, 90% of the interviewees suggested that third-party delays can be ignored when considering other disputes happening on the site.

Act of God – Only 20% of interviewees agreed that the act of God can become a dispute. CQS 1 claimed that natural disasters can be considered under this. He further confirmed that although there is a clause for the act of God in the contract agreement, parties experience disputes on bill payment, an extension of time, and price escalation.

5.1.8 Consultant related causes of disputes

Table 5.8 illustrates the ranking of consultant-related causes of disputes. CE 1, CE 2, CA 1, and CL 1 did not agree on any of the listed disputes. A brief note on the disputes related to the consultant is discussed below.

Table 5 - 8 Ranking of the Consultant Related Causes of Disputes

No	Consultant Related causes of disputes	CQS 1	CQS 2	CQS 3	CQS 4	EA 1	CE 1	CE 2	CA 1	CE3	CL1	Yes	Position
1	excessive extra work	Yes	Yes	Yes	No	Yes	No	No	No	Yes	No	5	2
2	lack of experience	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	5	2
3	differing site conditions	Yes	No	Yes	No	Yes	No	No	No	Yes	No	4	1
	Yes	3	2	3	1	2	0	0	0	3	0		

Excessive extra work- Interviewees already explained in the project-related category that different site conditions are frequent in any project. However, majority of the interviewees do not believe that excessive extra works are not related to project consultants. This reveals that it is not acceptable for a consultant to create extra work unless it is a site condition.

Lack of experience- EA 1 argued that lack of experience cannot be accepted in a consultant. However, CQS 1-4 mentioned that there were several instances where they have seen the incapability and lack of experience of the consultant for the project.

Differing site conditions- CE 3 explained that there can be different site conditions in any site. Adding to that CQS 1 suggested consultants should foresee different site conditions and arrange contract agreements accordingly. However, only 40% of interviewees agreed on the same.

5.2 Link between causes of disputes in the Sri Lankan construction industry.

Interviewees reported that there is a relationship between the disputes causes discussed above. Relationships between the disputes are presented in Table 5.9. Column 1 of Table 5.9 shows the causes of disputes related to the dispute category. Columns 2, 3, 4,5, and 6 present the disputes linked to column 1. The **green colour** indicates the resultant disputes in column 1, whereas the **red colour** indicates the disputes which can be created in column 1.

In column 1 under the owner-related disputes, variation initiated by the owner generates few other disputes. Those are indicated in green color in the same row such as payment delays, delays in work progress, and quality of works. However, variation is the resultant dispute cause of lack of document communication, lack of team spirit, and the adversarial/controversial culture of the parties.

It is apparent from table 5.9 that the disputes related to owner and contractor are the major contributors to creating other disputing categories, whereas the external factors related to disputes have a very low impact on other dispute categories. Most human-related disputes are owner and contractor-related disputes as shown in table 5.9. Therefore, it is revealed that the human relationships between the owner and contractor are having a major impact on the disputes in the Sri Lankan construction industry. Further, human-related disputes are not listed under column 1 of Table 5.9. It confirms that human-related disputes create many other disputes but not vice versa.

Table 5 - 9 Link between Disputing Causes in the Sri Lankan Construction Industry

Causes of disputes related to each category (1)	Owner (2)			Contractor (3)				Desig n (4)	Contract (5)			Human behavior (6)						
	Variations initiated by the owner	Payment delays	Suspension of Work	Delays in work progress	Time extension	Quality of works	Financial failure of the contractor	Major defects in maintenance	Inadequate/ incomplete specifications	Risk allocation	cost overrun	Different interpretations of the contract provisions	Lack of document communication	Lack of team spirit	Unfair behavior	Effects of psychological differences	Misunderstandings among participants	Adversarial/ controversial culture
Owner																		
Variations initiated by the owner																		
Payment delays																		
Change of Scope																		
Financial Failure of Owner																		
Suspension of Work																		
Non-Payment of Changes																		
Confusing Requirements of Owner																		
Owner Furnished Materials and Plant																		
Late Giving of Possession																		

Unrealistic expectations	1	1											2	2		2		2
contractor																		
Delays in work progress											1		2	2				
Sub-contractor inefficiency				1		1							2	2				
Inadequate planning				1									2	2				
Time extensions				2									2	2				
Quality of works		1						1					2	2				
Financial failure of the contractor		2											2	2				
Technical inadequacy of the contractor						1							2	2				
Non-payment to subcontractor				1									2	2				
Underquoting				1		1							2	2				
Major defects in maintenance						2							2	2				
Inappropriate Claims													2	2			1	
Design																		
Design errors						1							2	2				
Quality of design						1							2	2				
Availability of information				1									2	2				
Inadequate/incomplete specifications						1							2	2				

Design changes																			
Contract																			
Ambiguities in contract documents																			
Risk allocation																			
Change order negotiations																			
Cost overrun																			
Different interpretations of the contract provisions																			
Multiple prime contracting parties																			
Form of contract																			
Inadequate bid information																			
Interpretation of escalation/de-escalation																			
Scope of the contract																			
Human behavior																			
Lack of document communication																			
Lack of team spirit																			
Unfair behaviour																			
Effects of psychological differences																			

[illegible]

Table 5.5 shows that all the interviewees agreed on the lack of document communication and lack of team spirit as major dispute causes under the human behavioural related causes of disputes. It has been highlighted in Table 5.9 where lack of document communication and lack of team spirit is the major creator of all other disputes in the Sri Lankan construction industry. With that, it can be concluded that disputes under each category are a result of one or more dispute causes of human behaviour-related disputes.

The adversarial/controversial culture of the owner appeared to be one of the main reasons to have variations initiated by the owner, payment delays, suspension of work, non-payment of changes, and unrealistic expectations of the owner. The owner-related, suspension of work and confusing requirements of the owner are the result of unfair behaviour, effects of psychological differences, and misunderstanding among participants which are related to human behaviour. Therefore, it is revealed that most of the disputes related to the owner are the result of human behaviour-related disputes.

“Quality of work” which is a dispute under the category of “contractor-related” has become a outcome of several other disputes such as variations initiated by the owner, payment delays, owner furnished materials and plant, subcontractor inefficiency, technical inadequacy of the contractor, underquoting, design errors, quality of design, and inadequate/incomplete specifications. However, there will be major defects in maintenance if the suitable quality of the work is not maintained. Therefore, it was revealed that the quality of the work affecting to the time and cost of the project.

Under design-related disputes, design changes have more impact on the other disputes. Design changes are the reason to have variations initiated by the owner, time extension, and finally cost overrun. Not only are those as explained before design errors affecting the quality of work. Therefore, it can be confirmed that design error is a greater contributor to the project performance, where it affects the time, cost, and quality of the project (Rathnayake and Ranasinghe, 2020).

Risk allocation is the main dispute creator under the contract-related disputes as shown in Table 5.9. There suspension of work, the financial failure of the contractor, and cost overrun are the disputes initiated from the risk allocation. However, the project risks are allocated to the contractor by the owner through the contract agreement (Swiney, 2007). Therefore, a

properly prepared contract document will minimize the disputes initiated from the unfair risk allocation. Project-related and external factors related to disputes have a considerably low effect on other disputes in Table 5.9. However, the consultant-related and differing site conditions initiate delays in work progress, time extension, and quality of work.

5.2 Summary

Under each dispute category the following Table 5.10 presents the summary of disputes identified as the most commonly occurring disputes in the Sri Lankan construction industry. When closely observing the table, the human factor takes more prominence in every dispute except the weather.

Table 5 - 10 Most Common Causes of Disputes under Different Categories

Dispute Categories (from literature)	Dispute Causes (data analysis)
Owner Related dispute	variations initiated by the owner
	payment delays
Contractor Related dispute	delays in work progress
	sub-contractor inefficiency
	inadequate planning
Design Related dispute	Design errors
Contract Related dispute	ambiguities in contract documents
	risk allocation
Human Behavioural Related dispute	lack of document communication
	lack of team spirit
Project Related dispute	unforeseen changes
	complexity
External Factors related disputes	weather
Consultant Related disputes	excessive extra work
	lack of experience

However, it is evident that most of the disputes are reliant on each other. Therefore, one dispute will be the triggering point for several other disputes. As explained before one or more human behaviour-related disputes related to all the disputing categories explained so far.

Most of the human behaviour-related disputes are created by the owner and the contractor of the project. Similarly, the reason behind most of the disputes is both the owner and the contractor.

CHAPTER 6

6.0 Results Phase 2– Interview Data

6.1 Introduction

This chapter presents the qualitative results collected through semi-structured interviews to achieve objective two, evaluating the attributes of the alternative dispute resolution methods in the Sri Lankan construction industry which is Phase 2 of data collection. The collected data was presented in five different ADR practices in the Sri Lankan construction industry. Finally, finding out which ADR was suitable for the disputes was discussed in chapter 5.

Semi-structured interview questions started with the interviewees' demographic data, which are included in chapter 4. The interviewees were 8 arbitrators/adjudicators (AA), and 12 industry practitioners, representing consultant engineers (CE), consultant quantity surveyors (CQS), consultant architects (CA), and senior engineers (SE). The second set of questions aimed to ascertain the general understanding of common ADR practices and procedures in the Sri Lankan construction industry. The third sets of questions deals with the attributes of those ADR practices. Finally, the fourth set of questions was targeted to find the most suitable ADR for the resolution of causes of disputes under the different dispute categories presented in Chapter 5.

6.2 Results 2 - ADR practice in the Sri Lankan construction industry

The purpose of this section is to demonstrate the answers given in the second set of questions on the alternative dispute resolution methods in the Sri Lankan construction industry. The question was focused on finding out which was the most popular ADR method in Sri Lanka and the reason for its popularity. However, all the interviewees claimed that the term “popular” does not make any sense with ADR and suggested using ‘commonly used ADR’.

All interviewees suggested that negotiation, adjudication, and arbitration are commonly practised ADRs in the Sri Lankan construction industry. This view was further confirmed by presenting the dispute clause “19.0 claims, disputes and Arbitration” of the standard forms of bidding documents of the Construction Industry Development Authority in Sri Lanka. There the dispute clauses suggested using adjudication and arbitration as the dispute resolution (DR) method in the project (chapter 3). However, QS interviewees commented that mediation is also practised in the industry. But there is a negative comment on mediation practice in Sri Lanka by SE 1. SE 1 commented that most of the mediation decisions are difficult to enforce due to the disputing parties’ attitude. Both SE 2 and SE 3 felt that an engineer’s determination can consider an ADR, while others considered that as part of the engineer’s role in the project. Further, there were suggestions for ADR such as Med-Arb, mini-trial, and expert determination.

90% of the interviewees agreed that the disputing parties’ initial attempt to resolve disputes is negotiation, but hardly find any document about it in the project contracts. However, it can be concluded that negotiation, adjudication, and arbitration are the most common ADR practices in the Sri Lankan construction industry.

6.3 Results 2 - Attributes of Alternative Dispute Resolution in the Sri Lankan Construction Industry.

The third set of questions was prepared to compare the difference between the attributes discussed in the literature (Chapter 3) with the current ADR practices in the Sri Lankan construction industry. The ADR practices discussed in this section are negotiation, mediation, conciliation, adjudication, and arbitration.

Transcribed data were analysed using NVivo 12 under five high-level themes referring to the ADR methods and main and sub-attributes as mid and low-level themes. Table 6.1 shows an example of breaking the themes into the high-level theme, “Adjudication”.

Table 6 - 1 Initial Thematic Framework - Individual Interview

High-level theme	1.Adjudication
Mid-level theme	1.1 Neutral third
Low-level theme	1.1.1 effective case management of the neutral
Low-level theme	1.1.2 Impartiality
Low-level theme	1.1.3 Knowledge in construction
Low-level theme	1.1.4 Power to compel consolidation
Mid-level theme	1.2 Process
Low-level theme	1.2.1 Ability of the parties to appeal
Low-level theme	1.2.2 Confidentiality of the process
Low-level theme	1.2.3 Control by parties
Low-level theme	1.2.4 Flexibility of the proceeding
Low-level theme	1.2.5 Formality
Low-level theme	1.2.6 Privacy of the proceeding
Low-level theme	1.2.7 Range of Disputes
Low-level theme	1.2.8 Voluntariness
Mid-level theme	1.3 Settlement
Low-level theme	1.3.1 Binding decision/ settlement
Low-level theme	1.3.2 Consensus of the parties for settlement
Low-level theme	1.3.3 Fairness
Low-level theme	1.3.4 Possibility for Creative Settlement
Low-level theme	1.3.5 Scope of remedy to satisfy interest
Mid-level theme	1.4 Benefits
Low-level theme	1.4.1 Addressing power imbalance

Low-level theme	1.4.2 Cost
Low-level theme	1.4.3 Ease of implementation
Low-level theme	1.4.4 Improvement of communication between parties
Low-level theme	1.4.5 Penalty
Low-level theme	1.4.6 Preservation of business relationships
Low-level theme	1.4.7 Time for completion

The detailed analysis of each ADR method (high-level themes) under different mid and low-level themes is presented separately in five sections.

6.3.1. Results – Adjudication

Using NVivo 12 the number of passages for each theme (eg. Altogether 250 words used in discussing on adjudication practice) was counted and it enables one to know which were the most highly discussed themes among the interviewees. Adjudication has the second-highest score among the ADR practices in the Sri Lankan construction industry. AA has given more significance to both adjudication and arbitration as ADR methods. Figure 6.1 presents the mid-level themes and the number of passages coded with respect to adjudication.

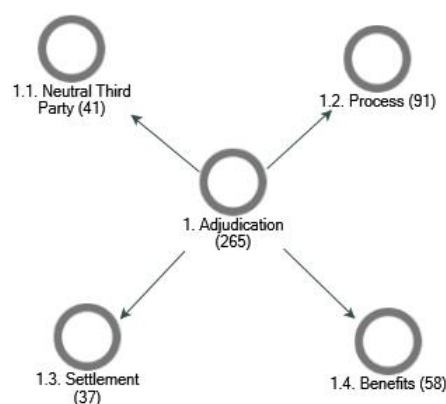


Figure 6 - 1 Adjudication - Number of passages in Mid-Level Themes

From the data in Figure 6.1, the views surfaced mainly in relation to the adjudication process, not the benefits that parties to the dispute can gain. Neutral third party and Settlement of the

adjudication achieved similar counts. Detailed descriptions of each mid and low-level theme are discussed below.

6.3.1.1 Neutral Third Party

The mid-level theme neutral third party received a 15% passage count out of the 265 total counts of Adjudication. The results show that the adjudicators in the Sri Lankan construction industry are satisfied with the listed attributes at different levels. 90% of interviewees have a positive view of Sri Lankan adjudicators' "knowledge in construction", whereas the negative view of "effective case management" and "impartiality" is questionable. Hence, the negative sub-attributes affect the overall adjudication process and the expected benefits.

However, 10% of interviewees claimed that the adjudicators who only have a legal background are not a suitable choice as an adjudicator since they do not have the required knowledge in construction. Therefore, it was suggested to keep the attribute as "knowledge" including the following arguments as professional qualifications, experience, and knowledge in contract law. In addition, AA highlighted that "power to compel consolidation" is applicable in court cases not in ADR – neutral third parties.

These findings are rather disappointing regarding the adjudication practice in the Sri Lankan construction industry. The presented results are significant in two aspects of the Sri Lankan adjudicators. Those are not being impartial and unable to manage disputes effectively. The only positive result is adjudicators have sufficient knowledge in resolving disputes.

6.3.1.2. Process

Comparing the responses for the attributes of adjudication all the interviewees showed more interest in the adjudication process. In that, "control by the parties" or party-autonomy became the most significant sub-attribute for AA, while "the ability of the parties to appeal" has become the least significant one. The total numbers of responses have a positive view of "confidentiality of the process", "formality", and "privacy of the proceedings" in the adjudication process that takes place in the Sri Lankan construction industry. AA argued that the sub-attribute "flexibility of the proceedings" is mismanaged by the disputing parties by requesting extensions to submit relevant documents and witnesses in adjudication. It will ultimately increase the time and cost of the adjudication process. As per the laid down

adjudication process in SBD/FIDIC parties cannot practice several sub-attributes such as “ability of the parties to appeal”, and “voluntariness”. AA explained that the parties’ control over the adjudication process will be over after appointing the adjudicator. Therefore, those three sub-attributes discussed before are not applicable to the adjudication practice in the Sri Lankan construction industry. Finally, according to AA, the “range of disputes” which cannot be resolved through adjudication is limited to matters arising from insurance policies, government regulations, and criminal matters.

These findings raise intriguing questions regarding the nature of the adjudication process in the Sri Lankan construction industry. ADR is believed to be a voluntary informal process, whereas in practice it is according to the dispute clause of the contract agreement. Further, the flexibility of the proceedings is used to grant extensions for the document submissions which ultimately amplifies the time and cost.

6.3.1.3. Settlement

The mid-level theme “settlement” received 37 passages. That response rate is nearly 14% of the total adjudication passage count. This is the lowest passage count of all the mid-level themes in adjudication. The sub-attribute “fairness” received the highest number of passages whereas “binding decision or settlement” received the lowest number of passages. All the interviewees agreed that adjudication settlement is not a binding decision unless parties agree on it. 90% of interviewees had a neutral view of the “consensus of the parties for settlement”, and “scope of remedy to satisfy interest” because the adjudication settlement is dependent on the submitted documentary evidence and witness statements. Turning to the responses received for fairness, it is obvious that all the engineering and Quantity surveying interviewees claimed that most of the adjudication decisions are unfair. However, AA argued that the problem is not with the adjudicator’s decision but with the attitude of the parties. Therefore, to achieve a fair and creative settlement, the adjudicator along with the parties to the dispute, needs to work with a positive attitude as explained by CQS s.

However, these results were not very encouraging for the use adjudication as a dispute resolution method in construction projects. There is no single positive view on the adjudication

settlement. Mainly it is not considered to be a fair decision which is a major reason for the above.

6.3.1.4. Benefits

In comparison to other mid-level themes in adjudication, “Benefits” received 22% of passage responses, which is the second-highest count in Adjudication. The results show that the benefits provided through adjudication with respect to the sub-attributes, satisfy at different levels. Except for a few AA altogether 95% of the interviewees have a negative view of cost, ease of implementation, and time for completion. All the AA interviewees have neutral views on “addressing power imbalance”, “improvement of communication between parties”, and “preservation of business relationships”. They further commented that those three attributes are not considered as important since the adjudicator referred to the submitted documentary evidence and witness statements in deciding on the adjudicator’s decision. However, ADR was introduced to keep addressing the power imbalance (Davis and Salem, 1984), improvement of communication between parties (Davis and Netzley, 2001), and “preservation of business relationships” (Hoogenboom and Dale, 2005). Therefore, the adjudicator and the adjudication process should have been created accordingly. All the interviewees remarked that the adjudication method described in the SBD and FIDIC form of contract does not allow implementation of any penalty to either party. Therefore, the adjudication practice in Sri Lanka also follows the same, and “penalty” can be removed from the attribute list.

When looking at the responses in detail all the engineering and Quantity Surveying interviewees explained that in some cases the cost of the adjudication exceeds the claim amount. Further, the Sri Lanka adjudicator takes nearly Rs. 50,000-70,000 per day which is nearly a one-month salary for an engineering supervisor. The following are the cost components of the adjudication process mentioned by the interviewees;

- adjudicator fee (both parties should bear equally)
- venue (Documentation and secretaries costs are covered under venue, retainer fee)
- counsellor fee
- administrative charges (stenography fees)
- legal fees for documentation

- Document preparation
- Transport cost
- Logging

The time taken to complete the adjudication process becomes much worse day by day. Even though the SBD and FIDIC guide specifies the completion of the process within a limited time period (28 days or 84 days) it takes nearly one or more years to give the adjudication decision. Both the documents suggested sharing the adjudication fee equally among the disputing parties.

From the responses the following results were obtained as suggestions to reduce the cost and time of adjudication;

- Use inhouse staff in document preparation
- Stick into the adjudicator's time plan
- Parties should have confidence in the adjudicator and the process
- Disputing parties should have a genuine willingness to resolve their dispute through adjudication
- The adjudicator's fee should be presented as a lump sum payment

Turning now to the "ease of implementation" it is the parties to the dispute who should decide. AA further explained that it is the party's autonomy to decide whether to follow the adjudicator's decision or not.

This result shows that the Sri Lankan adjudication practice does not provide the expected benefits. Mainly the cost and time spent on it are much higher than expected. Further, adjudicators or the disputing parties are not taking much interest in keeping and continuing their business relationships.

6.3.2. Results 2 – Arbitration

Among the five high-level themes, arbitration received the highest passage count. The responses received from SE and CA made the arbitration passage count more than the adjudication. Like adjudication, the mid-level theme "process" received the highest count of

all the mid-level themes. A common view among all the interviewees on the arbitration procedure is that it is adversarial in the same way as the court procedure and the arbitrator's award is solely dependent on the document and witness evidence. Figure 6.2 displays the mid-level themes and their passage count in arbitration.

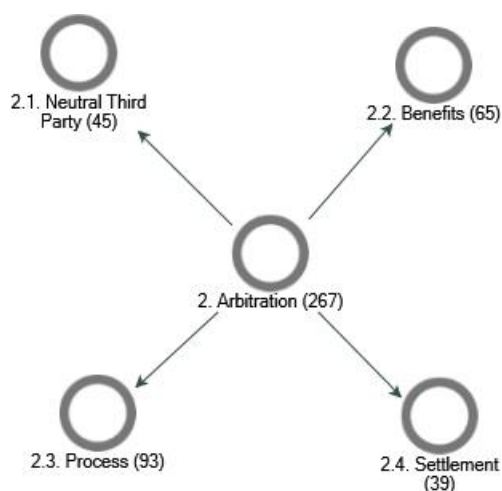


Figure 6 - 2 Arbitration - Number of Passages in Mid-Level Themes

According to the data presented in Figure 6.2 mid-level, the views surfaced mainly in relation to the arbitration “process” which received 93 passage counts. The lowest passage count received by a mid-level theme is “settlement” in arbitration. A detailed description of each mid and low-level theme is discussed below.

6.3.2.1. Neutral Third Party

The mid-level theme “Neutral third party” received 17% of the passage count. It is the third-highest count among the mid-level themes of arbitration. Similarly in adjudication, arbitration practice in the Sri Lankan construction industry satisfies the presented attributes at different levels. Even though all the interviewees have a positive view of the construction knowledge of the Sri Lankan arbitrators, CQS mentioned that when lawyers are appointed as arbitrators or the chairperson of the panel of arbitrators, the process becomes like a court procedure. SE also agreed with the statement that more lawyer involvement will create unnecessary delay and cost.

CE 1 and SE 2 saw the importance of keeping effective case management during the arbitration process whereas others did not consider it as an important attribute. It was significant to see the responses received from the engineering and QS interviewees on the impartiality of the arbitrator. As for adjudication, arbitrators also seem to be not acting impartially according to both professionals. Further, AA mentioned that the power to compel consolidation is not applicable in the arbitration procedure. However, AA further explained if the winning party and disagreeing party file court cases to enforce or set aside the arbitration award, both cases will be taken together by the court. Therefore, once a court case starts on the arbitration decision only the same attribute is applicable.

From the responses received it is evident that arbitrators need to make sure to develop the confidence of the construction industry professionals through their work procedure and arbitration decisions.

6.3.2.2. Process

Overall responses to the arbitration process are higher than the other mid-level themes. In response to the privacy of the proceeding, the range of disputes, the flexibility of the proceeding (only for document submission), and the confidentiality of the process received positive views. Engineering and QS interviewees argued that even though the proceedings are flexible there are many formalities in arbitration like in court proceedings.

AA claimed that arbitration is not a voluntary process, which parties refer to arbitration when it is stated in the contract agreement. Therefore, AA 2 stressed when a dispute emerged, that dispute referring to arbitration is a contractual requirement. The Arbitration Act No 11 of 1995 allowed parties to appoint the arbitrator, place of sitting, and several other conditions. Hence, SE 1 argued that party autonomy is null and void after appointing an arbitrator. Similarly, in adjudication, all the interviewees agreed that in arbitration parties cannot appeal but refer to the arbitration award has to be enforced or set aside by referring it to the courts.

However, the results show it is the general practice to include arbitration in the dispute resolution clause in the contract agreement if one needs to resolve disputes through arbitration. The Sri Lankan Arbitration Act No 11 of 1995 restricts parties' control over the arbitration after appointing the arbitrator or panel of arbitrators.

6.3.2.3. Settlement

The low-level theme “fairness” received a considerably higher passage count than the other low-level themes in arbitration settlement. All the interviewees agreed that an arbitration decision is binding and can be enforced by referring to the courts. However, 90% of interviewees do not agree that an arbitration decision is fair. Further, 50% of the engineering and QS interviewees indicated that the arbitration process does not provide a creative settlement and does not consider parties’ consent to the settlement. Therefore, the arbitrator will consider only the documentary and witness evidence.

It is depressing to see that the arbitration decision is not a fair decision. The only good thing about arbitration is it being a binding decision.

6.3.2.4. Benefits

Out of all four mid-level themes “benefits” of arbitration received the second-highest passage count. The mid-level “benefits” is divided into seven low-level themes. Results show that the Sri Lankan arbitration practice is not user-friendly. It is mainly due to the high cost and time taken to give the arbitration award. CE and CQS interviewees explained that some of the arbitration cases can drag on for years and the final cost of the arbitration can be 5-6 million rupees which is double the claim amount. Cost elements identified in arbitration are listed below.

- arbitrator fee
- venue (Documentation and secretaries costs are covered under venue, retainer fee)
- counsellor fee
- administrative charges (stenography fees)
- legal fees for documentation
- Document preparation
- Transport cost
- Logging

90% of AA claimed that parties are referring their cases to arbitration when they are not satisfied with the adjudication decision. Further, they pointed out that arbitration procedures or arbitrators are not focused on taking care of the communication improvement within the

parties, preserving the business relationships, and/or addressing power imbalance. All the interviewees agreed that the winning party can claim the cost of the arbitration from the losing party. Therefore, it can be considered a penalty in arbitration. However, the best thing in arbitration is the facility to implement the arbitration award by referring it to the court.

Like adjudication, the results are not encouraging to use arbitration as a dispute resolution method in the Sri Lankan construction industry. The only benefit in using arbitration is the ability to enforce the arbitration award.

6.3.3. Results 2 – Conciliation

70% of the interviewees agreed that conciliation is a rarely used ADR method in the Sri Lankan construction industry. However, AA1 described, that the reason for conciliation to be a rare ADR method is the unavailability of conciliation as a dispute resolution method in the contract agreement. In contrast, CQS mentioned that some of the disputing parties referred their dispute to conciliation to achieve a quick resolution. Figure 6.3 shows the mid-level themes and the number of passages coded with respect to conciliation.

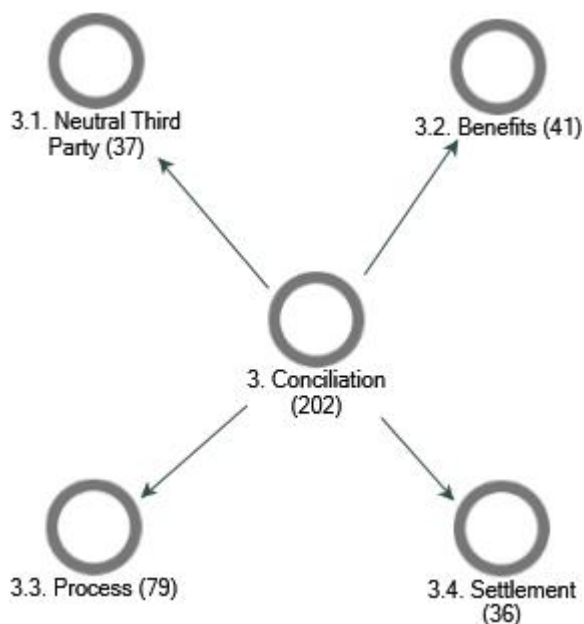


Figure 6 - 3 Conciliation - Number of Passages in Mid-Level Themes

From the responses received in this section, the process and the benefits of the conciliation were highlighted. A detailed description of each mid and low-level theme is discussed below.

6.3.3.1. Neutral Third Party

Neutral Third-party in conciliation received 18% of passage count out of four mid-level themes in conciliation. The results indicate a more positive view highlighting that the conciliator manages the case effectively and impartially and has the required knowledge in construction. Further, both CE 1 and SE 2 mentioned that it is important to keep the case managed properly throughout the conciliation process to achieve a successful outcome in conciliation. Additionally, it was highlighted by the engineering participants that the neutrality of the conciliator is dependent on the values and attitudes of the person. However, as indicated before, all the interviewees agree that the “power to compel consolidation” is not available in conciliation.

Compared to adjudication and arbitration, conciliation seems to be more reliable.

6.3.3.2. Process

Similar to adjudication and arbitration, in conciliation the mid-level theme “process”, received the highest passage count. A variety of perspectives were expressed on the sub-attributes of the conciliation process by the interviewees. Positive views were expressed on the confidentiality of the process, the privacy of the proceedings, and the flexibility of the proceedings (only for document submission). Concerns regarding the “range of disputes” that can be resolved by conciliation were positive and AA 1 explained that unless the dispute is regarding a criminal case or state policy matter, all others can be resolved through conciliation. Another good thing about conciliation is it is less formal.

Both SE and CQS argued that parties to the dispute use conciliation as a voluntary method to resolve disputes. In contrast, AA argued that it is the general practice to use the ADR methods include in the dispute resolution clause in the contract agreement. Therefore, conciliation is not a voluntary method, but it can be a contractual obligation when it comes to dispute resolution. However, all the interviewees agreed that within the conciliation process disputing parties cannot appeal. If the parties are dissatisfied with the conciliation decision, they can appeal to a higher ADR method. Both CE 1 and CQS 5 agreed that conciliation can be controlled by the parties to the dispute. But AA's opinion diverged from that and stated that once the conciliator was appointed, the parties' control of the process will end.

These results prove that the conciliation process is less formal and sometimes parties volunteer to use it even if it is not mentioned in the contract agreement.

6.3.3.3. Settlement

Out of the whole passage count in conciliation, a mid-level theme "settlement" received 18% of the passage count. There were more positive comments on the conciliation settlement than negative. All agreed that conciliation provides fair decisions by creating a settlement without being biased toward one party but trying to achieve the disputing parties' consensus towards the settlement. However, all the interviewees described that conciliation is not a binding decision unless parties to the dispute agreed to follow the decision.

The results encourage using conciliation as a dispute resolution method in the Sri Lankan construction industry. Other than adjudication and arbitration, conciliation settlement is a fair and acceptable decision.

6.3.3.4. Benefits

The low-level theme "benefits" of conciliation received 20% of the passage count. The responses received display a positive view on "addressing power imbalance", "improving communication between parties", and "preservation of business relationships". In contrast, the conciliator's suggestions on dispute resolution cannot be implemented easily. As explained by AA only if the parties to the dispute agree can the conciliation decision be implemented.

All the engineering interviewees agreed that the cost of conciliation is cheaper than mediation and no penalty will be imposed on either party. Compared to adjudication, and arbitration the time to complete conciliation is much shorter described by the AA.

These findings help us to understand the reassurance of using conciliation as a dispute resolution method for the Sri Lankan construction industry professionals. The most attractive point of conciliation is the lower cost and time taken to complete the conciliation process. Several other things are improving the communication between the parties and supporting them to continue the business relationship.

6.3.4. Results – Mediation

Mediation received the third-highest passage count from the interviewees. The responses reveal that AA is more interested in mediation than other ADR methods. According to AA 1 mediation can come in four different types as follows.

- Facilitative mediation – The mediator facilitates the parties to come to a decision.
- Evaluative mediation – The mediator evaluates the legal background and other contractual obligations and gives the decision. Cost may be higher in this type of mediation because the mediator should work on the case.
- Settlement mediation – The mediator helps the parties to bargain on their dispute and settle it fairly. In this case, the cost may be less.
- Transformative mediation – In this case the mediator understands and recognizes the needs, interests, values, and views of the parties and helps them to discuss their matter.

However, as indicated by 70% of interviewees mediation is not that popular in the Sri Lankan construction industry. But according to AA 3 mediation is a less costly and less time-consuming ADR method. Figure 6.4 presents the mid-level themes and the number of passages coded with respect to mediation.

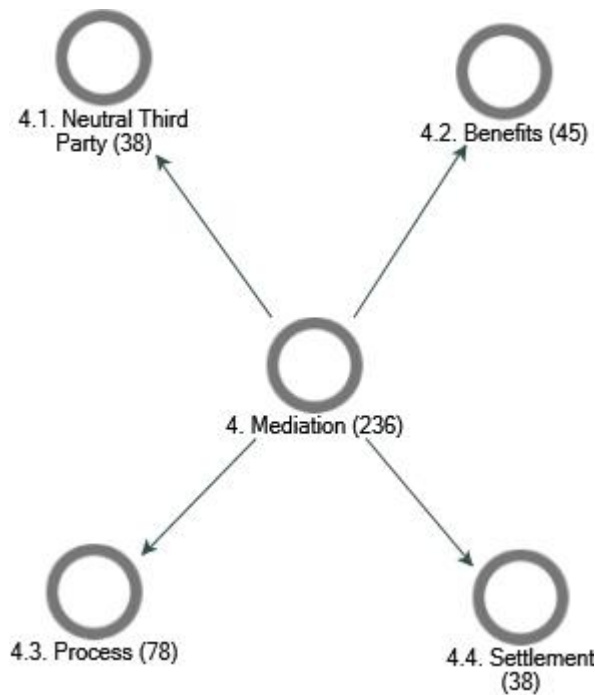


Figure 6 - 4 Mediation - Number of Passages in Mid-Level Themes

From the data in Figure 6.4, the views surfaced mainly in relation to the mediation process. Neutral third party and settlement received the same passage count. A detailed description of each mid and low-level theme is discussed below.

6.3.4.1. Neutral Third Party

The neutral third party of mediation received 16% of the total passage count out of the mid-level themes. Except for “power to compel consolidation” all other sub-attributes received positive views from the interviewees. AA explained that the power to compel consolidation is not applicable in mediation. CE 1 claimed that when the mediator effectively manages the case the mediation will be successful. AA and CQS suggested that the mediator should be a neutral person and SE explained that Sri Lankan mediators are neutral. All the interviewees agreed that mediators in the Sri Lankan construction industry have the required knowledge of construction.

The results encourage using of mediation since the mediator is impartial, have the required knowledge, and effectively manage the case.

6.3.4.2. Process

In response to the mediation-process the majority were interested in the “voluntariness” of the process. Overall responses indicate more positive views on the sub-attributes of the mediation process. Unlike in other ADR methods, disputing parties can appeal during the mediation process. Both CE 1 and CA1 explained that the disagreeing party will again appeal to reconsider any disputed area. Other positive sub-attributes to mediation are confidentiality of the process, the flexibility of the process (only for document submission), and privacy of the proceedings. AA described that parties have 95% of control over the mediation process. Further, AA claimed that there are few formalities in mediation such as preparation of meeting minutes, appointing parties’ representatives, document submission, and discussion procedure.

75% of interviewees agree that any type of dispute except criminal or government policy issues can be resolved through mediation. However, AA 1 argued that if the parties are not willing to discuss and come to an amicable solution it is impossible to resolve disputes through mediation. Further, AA agreed that mediation is a voluntary process, where mediation is generally not included in the contract agreement.

The results of this section encourage the use of mediation as a dispute resolution method in the Sri Lankan construction industry. Hence, the parties’ positive attitude toward resolving a dispute through mediation is useful.

6.3.4.3. Settlement

The mid-level theme “settlement” received a similar passage count as “neutral third party”. Like in the mediation process, “settlement” also received a more positive passage count. Both AA1 and AA 2 explained that mediation can be successful if the parties’ consensus is available for the settlement; the settlement is a fair, creative decision, and no bias towards one party. However, a mediation decision is not a binding decision unless both parties agreed to implement it (CA 1, SE 2). Further, AA suggested having a separate mediation act for the Sri Lankan construction industry.

The results revealed that the only barrier to implementing the mediation settlement is that it is inoperative without the parties' consent.

6.3.4.4. Benefits

The low-level themes of "benefits" of mediation received the second-highest passage score in mediation. Like in the mediation neutral third party, sub-attributes of the "benefits" received positive views from the interviewees. Both CA 1 and CQS 2 explained that the mediator should be able to treat the disputing parties equally and try to equalize the power between the parties to come to a solution. Further, all the interviewees agreed that through mediation, the parties' communication should be improved and they should be able to come to an amicable solution to continue with their business relationship. When CA 1 and CQS 2 highlighted the importance of having the above three attributes AA said mediation in the Sri Lankan construction industry showcased those three attributes positively. Further, 90% of interviewees agreed that mediation practice in Sri Lanka is cheap and less time-consuming. Further, they agreed on the unavailability of penalties in mediation.

Results display a positive view of the mediation practice in the Sri Lankan construction industry, where all the benefits are available.

6.3.5. Results – Negotiation

All the interviewees agreed that all the disputes should go through negotiations to find an amicable solution. If the negotiation fails, only then will the disputing parties refer the unresolved disputes to other ADR methods. Figure 6.5 presents the mid-level themes and the number of passages with respect to negotiation.

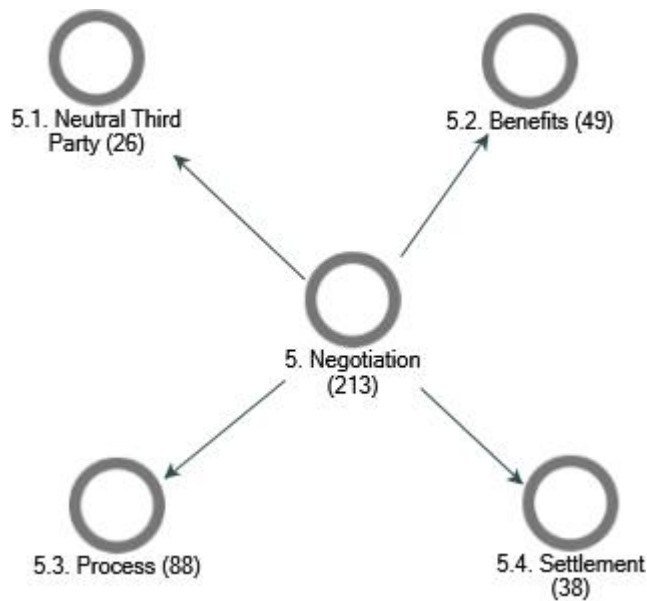


Figure 6 - 5 Negotiation - Number of passages in mid-level themes

From the data in Figure 6.5, the views surfaced mainly in relation to the negotiation process like in all the other ADR methods discussed so far. Detailed descriptions of each mid and low-level theme are discussed below.

6.3.5.1. Neutral Third Party

In response to the “neutral third party” of negotiation, AA commented that this attribute is relevant to the disputing parties’ representatives for the negotiation. It is because in a negotiation there is no neutral third party available. Since the representatives for the negotiation are from the project itself their technical and other knowledge about the construction is available according to all the interviewees. Since they represent their side, being impartial is not possible. However, to make the negotiation successful the representatives can manage the case effectively using negotiation skills (CQS). Further, the power to compel consolidation is not applicable in negotiation.

Therefore, the results revealed that in a successful negotiation, representatives of both parties should have to manage the case properly using their negotiation skills.

6.3.5.2. Process

The mid-level theme negotiation process received the highest passage counts in negotiation. The results show more positive views on the negotiation process. It is confirmed by 90% of interviewees that the negotiation process in Sri Lanka is confidential, proceedings are flexible, and privacy is maintained. Negotiation is a 100% voluntary method and parties can discuss the disagreeing points again and again until they come to an agreement. The entire AA explained that there are no formalities applied in negotiation and it can be the reason for not having records on some of the negotiations that happened at the sites. Further, both CQS and SE agreed that most of the disputes can be resolved by negotiation.

The results presented here encouraged using of negotiation as a dispute resolution method in the Sri Lankan construction industry.

6.3.5.3. Settlement

The mid-level “settlement” of negotiations received 18% of the passage count. Except for the sub-attribute “binding decision or settlement,” all other attributes seem to receive a positive view. All interviewees explained that negotiation settlements become binding if the disputing parties agree and follow the decision. Further, AA argued that a negotiation settlement should be a fair and creative one that has considered the parties’ consent without being biased.

The results revealed that negotiation is an ADR practice that produces a fair settlement by taking care of both the disputing parties’ interests.

6.3.5.4 Benefits

The mid-level “Benefits” received nearly 25% of the passage count out of the 213 total of negotiation. The results display more positive views on using negotiation as an ADR in the Sri Lankan construction industry. Major positive sub-attributes of Sri Lankan negotiation are the zero cost for the process and shorter time taken to complete the process. However, other sub-attributes such as addressing power imbalance, improving communication between parties, preservation of business relationships, and no penalty applied also seem to be robust in Sri Lankan negotiations. Hence, both CE 1 and CA 1 commented if the parties are going to showcase their power during the negotiation the process will fail. However, 95% of the

interviewees agreed that all the sub-attributes discussed are displayed in successfully completed negotiations in the Sri Lankan construction industry. The only negative point in negotiation is, unless parties agree to implement the decision taken through negotiation, it cannot be implemented.

The presented results raise the possibility of using negotiation as a successful ADR in the Sri Lankan construction industry.

6.4. Results 2– Finding suitable ADR for the disputes in the Sri Lankan construction industry.

Turning now to the final set of questions in the semi-structured interviews, respondents were asked to comment on the suitable ADR for the listed disputes from Chapter 5. This section of questions asked the interviewees to expand on the reasons for their choice. Figure 6.7 displays the passage count of each dispute category. Interviewees discussed more about the owner-related disputes and fewer responses were received for external factors-related disputes.

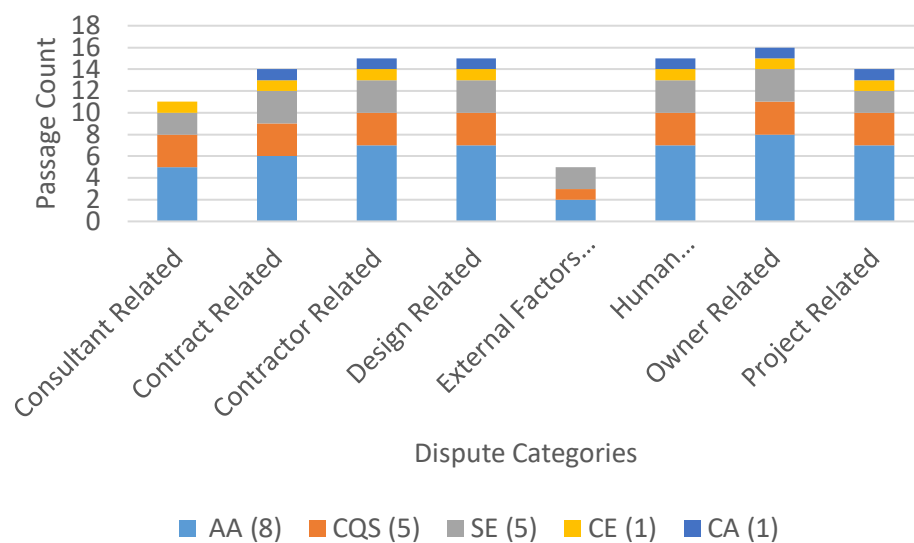


Figure 6 - 6 Dispute categories - Number of passages counted from interviewees

A detailed description of each dispute category with reference to ADR is presented below.

6.4.1 Results 2 - ADR for Owner Related disputes

Both SE 4 and CQS 5 proposed that owner-related disputes can be resolved through negotiation. In contrast, AA suggested it would be better to refer this kind of dispute to adjudication or arbitration since the owner is not willing to accept their faults in negotiation. CQS explained that selecting a suitable ADR for owner-related disputes can only be done considering a few of the other factors such as claim amount, time of the dispute, and the type of project and project participants. Adding to the same AA 7 explained that parties' attitude is a major factor in the selection of a suitable ADR method for dispute resolution.

6.4.2 Results 2 – ADR for Contractor Related disputes

90% of AA explained that listed disputes under the contractor related category are mainly directed to money and time. Therefore, they suggested using adjudication and arbitration for this kind of dispute. Additionally, parties' positive attitude is required to use other voluntary methods such as negotiation, mediation, or conciliation. In contrast, AA 2 argued that through the engineer's determination referring to the contract agreement the listed disputes can be resolved. However, CQS believed that the claim amount and the time that the dispute occurred are major factors in selecting a suitable ADR method.

6.4.3 Results 2 – ADR for Design Related disputes

It was suggested by both AA 1 and CE 1 that conciliation is a suitable method to resolve design-related disputes. AA 1 further explained that the conciliator has the possibility to make both the parties understand the referred dispute and produce a workable solution. In contrast, AA 2 described whenever there is an issue in design or drawings the engineer should be the first person to consult and get a solution. If parties disagree with the engineer's decision disputing parties can refer their dispute to ADR based on the contract agreement.

6.4.4 Results 2 – ADR for Contract Related disputes

Both AA1 and AA 2 contended that disputes under contract related will not be possible to resolve through negotiation. It is because the contract document is prepared by the consultant, and he will not accept any fault or changes to the contract document without

reliable advice. Therefore, AA 2 suggested resolving this kind of dispute through mediation or other ADR methods discussed in this chapter. Further, he suggested referring the dispute first to the engineer to the contract and failing that, only then referring it to the next level of ADR.

6.4.5 Results 2 – ADR for Human Behavioural Related disputes

As discussed in the literature review “dispute” refers to a disagreement between two parties. AA 1 explained there can be many disagreements between the parties during the pre- and post-contract stage which can finally escalate into disputes. AA explained that parties can use negotiation to solve this kind of dispute. However, CQS believes it is difficult to resolve disputes in the human-related category unless it is handled through negotiation. The engineering population further added to that by stating the parties’ positive attitude is important to resolve this kind of dispute.

6.4.6 Results 2 – ADR for Project Related disputes

According to AA 1 mediation is a suitable method to resolve project-related disputes. However, as explained before CQS suggested referring the disputes first to the engineer to the contract and failing that, only then referring to the next level of ADR. Additionally, CQS and SE mentioned the selection of ADR depends on other factors like the form of contract, claim amount, and parties’ attitude towards dispute resolution.

6.4.7 Results 2 – ADR for External Factors Related disputes

AA 2 suggested using mediation to resolve this type of dispute. But again AA 2 suggested that any dispute should first be directed to the engineer’s determination. 75% of interviewees suggested using a suitable ADR with respect to the form of contract and the contract value. CQS mentioned that to recommend an ADR for specific dispute it is important to study the dispute and other related factors.

6.4.8 Results 2 – ADR for Consultant Related disputes

60% of AA and CE 1 commented that the disputes under this category can be resolved through negotiation and mediation. Both AA 5 and AA 4 suggested any method is suitable to resolve the disputes under the category of consultant related. In contrast, CQS 1 claimed there are

several factors that need to be satisfied to select the possible ADR method to resolve disputes. One of those is the procurement root. SE 2 and CQS 5 further mentioned type of project, situation, and value of the claim are some other factors in determining a suitable ADR.

6.5 Summary

In this phase two of data collection, the aim was to verify and evaluate three goals. Through an extensive literature study, it was found that adjudication, arbitration, mediation, conciliation, and negotiation are the most practised ADR methods in the Sri Lankan construction industry. The results presented in section 6.2 of this chapter, showcase that negotiation, adjudication, and arbitration are the most practised ADR methods in the Sri Lankan construction industry.

The second goal of the phase two data collection was to evaluate the attributes of ADR in the Sri Lankan construction industry. Summarized results of ADR attributes of the Sri Lankan construction industry are presented in Table 6.2.

Table 6 - 2 Summary of the results - Attributes of ADR in the Sri Lankan construction industry

Mid-level themes	Low-level themes	Adjudication	Arbitration	Conciliation	Mediation	Negotiation
Neutral third	Effective case management	No	No	Yes	Yes	Available with the representatives
	Impartiality	No	No	Yes	Yes	Being impartial cannot practice in negotiation since parties have their own stand.
	Knowledge – Experience in construction	Yes	Yes	Yes	Yes, mediation skills are also important	Yes, negotiation skills are also important
	Power to compel consolidation	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
process	Ability of the parties to appeal	No	No	No	Yes	Yes
	Confidentiality of the process	Yes	Yes	Yes	Yes	Yes
	Control by parties	after appointing the adjudicator parties' control will end.	after appointing the arbitrator parties' control will end.	after appointing the conciliator parties' control will end.	Yes	Yes, 100% control by parties.

	Flexibility of the proceeding	Flexibility is there only for document submission.	Flexibility is there only for document submission.	Flexibility is there only for document submission.	Flexibility is there only for document submission.	Yes. Available.
	Formality	Yes	Yes	Less formal	Less formal	No
	Privacy of the proceeding	Yes	Yes	Yes	Yes	Yes
	Range of Disputes	Except for criminal/ state policy issues	Except for criminal/ state policy issues	Except for criminal/ state policy issues	Except for criminal/ state policy issues	Except for criminal/ State policy issues
	Voluntariness	No	No	50% agreed	Yes	Yes
settlement	Binding status of the decision or settlement	No	Yes	No	No	No
	Consensus of the parties for settlement	No	No	Yes	Yes	Yes
	Fairness	No	No	Yes	Yes	Yes
	Possibility for creative settlement	No	No	Yes	Yes	Yes
	Scope of remedy to satisfy the interest	No	No	Sometimes	Yes	Yes

Benefits	Addressing power imbalance	No	No	Yes	Yes	Yes
	Cost	High cost	High cost.	Cost is less.	Higher than conciliation	Zero cost
	Ease of implementation	No, Party autonomy	Yes	No, Party autonomy	No, Party autonomy	No, Party autonomy
	Improvement of communication between parties	No	No	Sometimes this can happen.	Yes	Yes
	Penalty	Not available	Yes	Not available	Not available	Not available
	Preservation of business relationships	No	No	Yes, up to a certain extent.	Yes	Yes
	Time for completion	high	High	Less time is taken.	More than conciliation.	Less time taken

The results identified several ADR attributes which are not applicable in the Sri Lankan practice due to the ADR methods laid down in the SBD and FIDIC form of contract. These are the power to compel consolidation, the ability of the parties to appeal, and the penalty. However, in arbitration practice, the winning party claims the money in relation to the dispute and the process too. Even though it is not mentioned in the SBD or FIDIC it can be considered a penalty in arbitration.

The second major finding is Sri Lankan adjudicators and arbitrators are not considered to be impartial and fail to manage cases effectively. With that, the settlement presented by both was not considered a fair decision. Another major finding is that the neutral third party of the ADR practice in the Sri Lankan construction industry does have the required knowledge in construction. It was suggested that the sub-attribute “knowledge in construction” be changed to “knowledge”. Further, that knowledge was defined as industry experience, professional qualifications related to construction, and knowledge of contract law.

The results also show conciliation, mediation, and negotiation as voluntary ADR methods, whereas adjudication and arbitration are shown as contractual obligations with respect to disputes. Another significant finding is adjudication and arbitration are costly and time-consuming ADR practices in the Sri Lankan construction industry. Using the amber colour in Table 6.2 highlights the negative views given for the sub-attributes of the ADR practices. There, settlement, and benefits, of both adjudication and arbitration received more negative views than positives. Therefore, it is evident that adjudication and arbitration practices are unpopular in the Sri Lankan construction industry. In contrast, the only negative argument in the three voluntary methods is the difficulty in enforcing the decision without the parties’ approval.

The results of phase 2 support the idea of ADR through mediation, conciliation, and negotiation for the Sri Lankan construction industry. Further, the results have raised an important question about the nature of the adjudication and arbitration practices in the Sri Lankan construction industry which is a contractual obligation with respect to disputes.

The final set of the results in phase 2 showcases that negotiation is one of the best methods to resolve disputes in chapter 5. Further, mediation is also suggested to be used for project-related, external factors-related and consultant-related disputes. Conciliation was proposed

as a better method for design-related disputes. However, adjudication and arbitration were suggested for any type of dispute in chapter 5.

CHAPTER 7

7.0 Results 3 - Case study

7.1 - Introduction

The purpose of this chapter is to validate the attributes of ADR through case studies. Chapter 6 showcases negotiation, adjudication, and arbitration as the commonly used ADRs in the Sri Lankan construction industry. Out of these three ADR methods, adjudication and arbitration were highlighted as contractual obligations of the parties to the contract when it comes to dispute resolution. Therefore, case studies were selected accordingly. The collected data was presented in six sections following the case description section.

7.1.1 Case Description

As discussed in the methodological chapter, the five case studies were taken from three Construction Industry professionals who work as arbitrators/adjudicators. While discussing the background information about the cases Stakeholders' names, project names, and the location of the project were not disclosed for confidentiality reasons.

7.2 Case study – Case 1

Case 1 is about a public sector building renovation project signed between a government institution and a private contractor. The contract agreement was signed between the parties on 12th January 2016. Although the date of commencement as per the contract was 20th January 2016, due to a delay in handing over the site by the employer over a period of two weeks, the actual date of commencement was 02nd February 2016. The contract period was 182 days with 365 days defect liability period. Disputes were referred to ADR which started from mediation and then adjudication and ended with the arbitration. Detailed information on Case 1 is listed in table 7.1.

Table 7 - 1 Case 1 - Project Information

Case No	Case 1
Contract	Renovation of Public sector office building & staff quarters
Client	Public sector institution
Contractor	CIDA registered contractor
Procurement committee	Public sector institution
Agreed contract Amount excluding VAT	RS. 8,615,000/-
Bid date	29 th Oct 2015
Date of letter of acceptance	06 th Jan 2016
Agreement signed	12 th Jan 2016
Handing over the site to the contractor	28 th Jan 2016
Contract start date	02 nd February 2016
Date of completion/ contract completion (taking over from contractor)	02 nd August 2016
Contract period	182 days
Defect notification period	365 days
Form of Contract	CIDA/SBD/03-02 nd Edition published in Jan 2007
Bidder's qualification	C4
Dispute Clause	33.1.1 Adjudicator to be appointed by CIDA
Mediation	Meeting held on 13 th September 2017
Adjudicator appointment	02 nd March 2018 by Construction Industry Development Authority (CIDA)
Preliminary meeting date	03 rd April 2018, Adjudicator's agreement was discussed, and the time frame was fixed.
Statement of claim submitted on 10 th April 2018	This includes 10 disputes with claims including interest payment.

Statement of response on 3 rd May 2018 (after two weeks extension)	Respondent submitted this after two weeks extension.
Statement of reply by the claimant on 30 th May 2018	After 21days extension.
Hearing on 14 th June 2018	This is a postponed date from the initial agreement and the hearing held at Sri Lanka National Arbitration Center (SLNAC) at 10.30am.
Final written submission by claimant	Submitted to the adjudicator on 10 th July 2018
Final written submission by despondence	Submitted to the adjudicator on 12 th July 2018
On 21 st July 2018 Adjudicator sorted further clarifications.	Through email by giving a week's time for both the parties to respond. The adjudicator took another week's extension to give the adjudicator's decision.
Adjudication decision made	14 th August 2018
Parties decided to go for Arbitration	05 th December 2018
Arbitrator appointment	8 th December 2018
Preliminary meeting	13 th December 2018
Submission of statement of claim	7 th February 2019
Submission of statement of Response	4 th March 2019 (with an extension)
Statement of answer by the claimant	21 st March 2019 (with an extension)
Hearing 1	25 th March 2019 at SLNAC
Hearing 2	8 th April 2019 at SLNAC
Arbitration award	15 th May 2019

The client introduced several changes to the materials in the BOQ, which the client should have done in the pre-contract stage. Another issue was handing over the site with the agreement

to rectify defects during the defect liability period. Half of the retention money was kept with the client to use during the defect liability period and other half was released by submitting a bank granty by the contractor. Since the number of defects were more than the retained retention money and the bank guarantee client requested contractor to rectify those defects. Above all the building was take over with the agreement of rectifying the defects by the contractor. Rectification notices from the client had gone back and forth to the Construction Industry Development Authority (CIDA) in Sri Lanka. Since the client and contractor failed to come to an amicable solution on defect rectification and several other disputes both parties requested CIDA to intervene and suggest a solution acting as a mediator.

7.2.1 Mediation

Mediation was held nearly one year after site handover. The disputes referred to mediation are listed in table 7.2.

Table 7 - 2 Disputes referred to Mediation

No	Description	The party initiated the claim	Dispute category
Dispute 1	Even though the Defects Notification period expired on 02 nd August 2017, notified defects are not rectified by the contractor.	Client	Contractor-related – Major defects in maintenance
Dispute 2	Several Interim bills and final bills submitted by the contractor after handing over the site are not settled by the employer	Contractor	Owner related – Payment delays
Dispute 3	Rate breakdowns for Extra works submitted by the contractor are not approved.	Contractor	Owner related – variations initiated by the owner

After referring to the submitted claims the reasons for the above-tabled disputes were as follows.

- Dispute 1 – Four defects identified by the project engineer and reasons for those disputes are inadequate specifications, not clear information, contractor's poor quality of work, and major defects in maintenance.
- Dispute 2 – Contractor unable to submit an interim bill due to the delay in new rate approval of the variations initiated by the client (Dispute 3). The client delayed paying several other bills as agreed in the contract agreement. However, the final bill was not paid by the client due to unsatisfactory quality of work.
- Dispute 3 –The client introduced a few variations that ultimately affected the existing price rate.

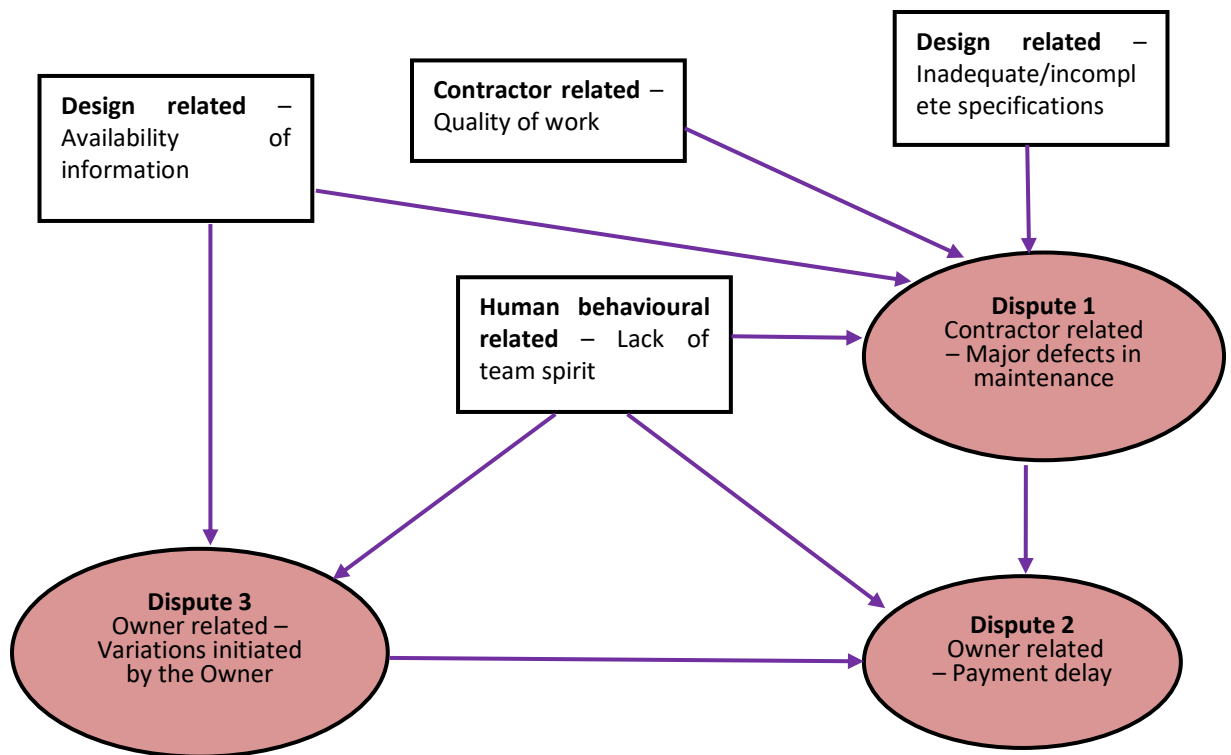


Figure 7 - 1 Case 1, Mediation - Link between Referred Disputes

Figure 7.1 displays the interrelationship between the disputes in case study 1. The findings on the disputes' interrelationships in the Sri Lankan construction industry discovered in chapter 5 are further proved here.

Both the parties agreed on the following mediation outcome.

The client agreed to pay the delayed payments including the interest and payments for the variations as per the contractor's new rate breakdown. Similarly, the contractor agreed to rectify the defects by the date agreed by both parties. Meeting minutes further explain that parties have agreed upon dates to complete the above-mentioned tasks.

Table 7.3 displays the preliminary analysis of the mediation in case study 1 against the theoretical attributes. It is apparent from table 7.3 that only two attributes were not able to be achieved in mediation. Those are ease of implementation and binding decision /settlement. Further, it was found that "power to compel consolidation" is not applicable for mediation which is a repetition of the results found in chapter 6.

According to the results, the best thing in mediation is that disputing parties are happy with the mediator, the mediation process, and the settlement. A comparison of the findings with chapter 6 confirms that mediation practice in the Sri Lankan construction industry is at a satisfactory level. It can therefore be assumed that the parties to the contract should use mediation as a prime dispute resolution method in the construction industry.

Table 7 - 3 Case 1, Mediation - Attributes

Mid-Level Themes	Low-Level Themes	The behavior of Case 1 - Mediation
Neutral Third Party	Effective case management of the neutral	Documents show that the mediator has indicated the importance of resolving disputes through the voluntary process like mediation and clearly explained the process.
	Impartiality of the neutral	Neither party claimed mediator was biased toward either side.
	Knowledge in construction	35 years of construction industry experience, Chartered Engineer, 10 years of experience in construction ADR.
	Power to compel consolidation	Not applicable
Benefits	Addressing power imbalance	The mediator has addressed the disputes in such a way that a party will get what they deserve only.
	Cost	Less cost and the cost parameters are mediator, venue, and documentary costs.
	Ease of implementation	Even though the parties agreed on the mediation outcome, it was not implemented.
	Improvement of communication between parties	Parties were able to freely speak on their stand.
	Penalty	No penalty was requested by either party.
	Preservation of business relationships	Both parties seem to be agreed on the mediation outcome and agreed to work together accordingly.
	Time for Completion	Once the disputes were referred to mediation discussions were held on two consecutive days and meeting minutes with the agreed dispute settlement were submitted within a week.
Process	Ability of the parties to appeal	Parties to the dispute did not appeal.

	Confidentiality of the process	Neither party nor the mediator disclosed any information about the case.
	Control by parties	Parties requested CIDA to appoint the mediator. However, after the appointment mediator decided on the process and it was controlled by the mediator.
	Flexibility of the proceeding	The mediation process of the CIDA had flexible proceedings.
	Formality	Several formalities like, appointing a mediator, document handling, and conducting the meeting were available.
	Privacy of the proceeding	Mediation was held at CIDA conference hall where no unauthorized person was allowed to come in.
	Range of Disputes	Disputes under different categories were referred. Not only that those disputes were interrelated.
	Voluntariness	Mediation was not included in the Dispute resolution clause of the agreement. However, both parties volunteer to refer their dispute to mediation.
Settlement	Binding decision/settlement	This is not a binding decision.
	Consensus of the parties for settlement	Both parties agreed on the mediation settlement.
	Fairness	It seems parties believe that the mediation settlement is fair.
	Possibility for Creative Settlement	It gave the opportunity for the parties to discuss and come to a creative settlement.
	Scope of remedy to satisfy interest	Mediation decision has been taken based on both parties' interest.

Since the mediation settlement is not binding and only parties can decide on the implementation, the said mediation outcome did not work out. Therefore, the contractor referred the disputes to adjudication after obtaining consent from the client under clause 14.1 of CIDA/SBD/03-02nd Edition published in Jan 2007. The clause is as follows.

“Any dispute of whatever nature arising out of or in relation to this agreement shall in the first instance be attempted to be resolved by way of adjudication in accordance with the adjudication procedure set forth in Clause 14.2.”

7.2.2 Adjudication

Both client and the contractor requested CIDA to appoint an adjudicator. Hence, CIDA on the 2nd March 2018, appointed an adjudicator out of the list of adjudicators registered under CIDA. According to the clause-14 adjudications should be completed within 28 days. However, after the adjudicator’s appointment, 165 days were spent on giving the adjudication decision. The following are the reasons for the delay in the adjudication decision.

- Taking nearly one month to do the preliminary meeting.
- Taking extension for document submission by both parties.

Altogether ten disputes were referred to adjudication including the first three disputes in Table 7.2 and the new seven disputes. All the ten disputes are presented in Table 7.4.

Table 7 - 4 Disputes referred to Adjudication

No	Description of the dispute	The party initiated the claim	Dispute category	Adjudication decision
Dispute 1	Rectification of defects happened during the maintenance period.	Client	Contractor-related – major defects in maintenance	Approved to deduct the amount of money spent for defect rectification by the client.
Dispute 2	The claimant has stated that there was a delay in payment of interim bill no. 1 causing a financial setback during the execution of works and he has claimed interest for the payment delay	contractor	Owner-related – payment delays	Approved the delayed payment including interest.
Dispute 3	The claimant stated that the Engineer instructed to make the thickness of the floor concrete but refused to approve as a variation order	contractor	Owner-related – variations initiated by the owner	Approved to pay for the variations.
Dispute 4	Refusal to make payment certified in the final bill (total claim with interest)	contractor	Owner-related – Non-payment of changes	Asked the contractor to submit a fresh bill for the payment
Dispute 5	Refusal to compensate for the adoption of new timber in place of old timber obtained from old building	contractor	Owner-related – Non-payment of changes	Approved to pay for the variations.
Dispute 6	Providing Lunumidella timber moulding to timber ceiling works	contractor	Owner-related – Non-payment of changes	Approved to pay for the variations.
Dispute 7	Sample testing of timber molding	contractor	Human behaviour-related – unfair behaviour	Approved to pay for the testing.

Dispute 8	Providing tongue and groove joints in ceiling work	contractor	Owner-related – Non-payment of changes	Approved to pay for the variation
Dispute 9	Refusal to release half of the retention money at the time of taking over the works.	contractor	Human behaviour-related – unfair behaviour	Approved to release of 5% of the contract sum deducting the amount for defect rectification.
Dispute 10	Reimbursable of expenditure to be incurred because of the Adjudication process caused by no fault of the claimant	contractor	Contractor-related – inappropriate claims	Did not approve.

Except for disputes number 9 and 10 in the above table, all other disputes are the exaggerated version of the three disputes referred to mediation. Further, it seems that most of the disputes are owner-related disputes.

The adjudicator submitted his decision on 14th August 2018 after five months of the adjudication process and the decision for each dispute is presented in Table 7.4. The adjudicator's decision for all the variations is favourable for the contractor. The decision on the defects created by the contractor was approved to be deducted from the retention money.

From Dispute 10 the contractor requested the reimbursement of the expenditure incurred as a result of the adjudication process. But referring to Clause 14.2 adjudicator objected to that request and asked both the parties to equally share the expenditure incurred during the adjudication process. According to Gebken and Gibson, (2006) dispute assessment framework, the cost components identified through Case 1 are listed in Table 7.5.

Table 7 - 5 Case 1 - Types of cost in the Adjudication process

Type of cost	Cost elements	Value
Direct cost	Cost for claim expert (respondent & claimant)	RS. 175,000.00
	Adjudicator's fee	RS. 500,000.00
	Cost for venue (approximately)	RS. 35,000.00
Indirect cost	Extra time spent for adjudication decision	137 days
	Overhead cost (Respondent & claimant)	Client allocated technical staff for the preparation of claim and defect rectification. Contractor allocated technical staff for claim preparation.
Hidden cost	Opportunity cost	Client wrote a letter to CIDA stating the dissatisfaction with the contractor's work and to blacklist the contractor
	Relationship cost	Employer and contractor have lost faith in their relationship.

7.2.3 Reason's to reject Adjudicator's decision

The adjudicator's decision shows that both parties are equally responsible for the defects that occurred during the maintenance period. Additionally, the delay in payment and not paying for the variations were considered the faults of the client and instructed to do the payment with interest.

The client was not happy with the adjudicator's decision and claimed that it is more favourable to the contractor and not a fair decision.

7.2.4 Compare and contrast Mediation settlement and Adjudicator's decision

In brief, in the mediation settlement the client agreed to make the delayed payment with interest and the contractor agreed to rectify the stated defects. The mediation outcome and

adjudicator's decision on the delayed payment and defect rectification are the same. The additional disputes referred to adjudication are the fee for adjudication which was rejected by the adjudicator. The adjudicator recommended releasing the retention money by keeping the money for the defect rectification.

The findings display that both the mediation and adjudication produced similar solutions for the disputes. Unfortunately, the decisions were not enforceable since the adjudication and mediation decisions are not binding, and the parties to the dispute were not willing to enforce the decisions. The result of it created time, cost, and relationship damage to both the parties.

Table 7 - 6 Case 1, Adjudication - Attributes

Mid-Level Themes	Low-Level Themes	Behavior of Case 1 - Adjudication
Neutral Third Party	effective case management of the neutral	Documents show that the adjudicator has indicated the importance of resolving disputes through adjudication and clearly explained the process.
	Impartiality of the neutral	The reasons for not accepting the adjudicator's decision client indicate his doubts on adjudicator's impartiality.
	Knowledge in construction	35 years of construction industry experience, Chartered Engineer, 10 years of experience in construction ADR.
	Power to compel consolidation	Not applicable
Benefits	Addressing power imbalance	Specifically, this cannot identify.
	Cost	Compared to the claim amount parties together spent nearly double the claim amount for the adjudication process. Not only that it has taken 137 days to give the decision where both the parties had to keep on standing to provide information when ever needed.
	Ease of implementation	Client did not agree and submitted the notice of disagreement.
	Improvement of communication between parties	Parties spoke on their point of view during the meeting.
	Penalty	No penalty was given. Adjudication cost was beard equally by both the parties.
	Preservation of business relationships	No document evidence on this.
	Time for Completion	137 days. This is more than what is written in the contract agreement.
Process	Ability of the parties to appeal	Parties cannot appeal but referred disputes to arbitration.

	Confidentiality of the process	neither party nor the adjudicator disclosed any information about the case.
	Control by parties	Parties requested CIDA to appoint the adjudicator. However, after the appointment adjudicator decided on the process and it was controlled by the adjudicator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	Adjudication was performed as explained in the contract agreement.
	Privacy of the proceeding	Adjudication was held at SLNAC where no unauthorized person was allowed to come in.
	Range of Disputes	Disputes under different categories were referred. Not only that those disputes were interrelated.
	Voluntariness	Adjudication was not a voluntary process. It is in accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision/ settlement	This is not a binding decision. Disagreeing party (client) referred to arbitration.
	Consensus of the parties for settlement	Client did not agree on the decision.
	Fairness	Client claimed that adjudicator's decision is not fair and biased to the contractor.
	Possibility for Creative Settlement	Cannot decide since it is being rejected.
	Scope of remedy to satisfy interest	Client claim that adjudicator tried to satisfy contractor's interests.

Table 7.6 reveals the following. First, it is all about the attributes of an unsuccessful adjudication. The adjudication process has taken more than the time stated in the contract agreement. Not only have that, the total cost for the adjudication process was nearly doubled the claim amount. Finally, it reveals that the adjudication decision was rejected by the client claiming it is an unfair decision where the adjudicator seems to favour the contractor (claimant for adjudication).

The results are discouraging to the use of adjudication as an ADR in the Sri Lankan construction industry mainly due to the time, cost and it not being a binding decision.

The disagreeing party (client) to the adjudicator's decision referred the disputes to arbitration after getting consent from the contractor as per clause 14.2. – Adjudication procedure sub-section (j). The clause is as follows.

“The Adjudicator shall not act as an Arbitrator. The decision of the Adjudicator shall be deemed final and binding on the Parties if neither Party refers the dispute to arbitration in accordance with Sub-Clause 14.3 within twenty-eight (28) Days of the Adjudicator's determination”.

7.2.5 Arbitration

Both client and contractor requested CIDA to appoint an arbitrator. Hence, CIDA appointed a sole arbitrator on 8th December 2018. The arbitration was conducted according to the Arbitration Act No. 11 of 1995 of Sri Lanka. As per the arbitrator's time plan, the process was supposed to finish within 4 months. However, for the following reasons, the arbitrator took 5 months to give the award.

- Taking extensions for document submissions.
- Taking more time for witness hearings.

All the disputes in Table 7.4 were referred to arbitration plus the new disputes listed in Table 7.7.

Table 7 - 7 Disputes referred to the Arbitration

No	Description of the dispute	The party initiated the claim	Dispute category
Dispute 11	Cost of employing a full-time technical officer for defect rectification	Client	Contractor-related – major defects in maintenance
Dispute 12	Cost for technical staffs' site visit	Client	Contractor-related – major defects in maintenance
Dispute 13	Procurement of balance defect rectification work	Client	Contractor-related – major defects in maintenance
Dispute 14	Consultancy fee for preparation of claim	both the client and contractor	Human behaviour related – lack of team spirit
Dispute 15	Losing rental income for not accommodating the building on time	client	Contractor-related – major defects in maintenance
Dispute 16	Requesting VAT for already done payment	contractor	External factors related –Legal and economic factors
Dispute 17	Reimbursement of the expenditure incurred by referring to arbitration.	contractor	Human behaviour related – lack of team spirit

The arbitrator rejected claims forwarded on disputes 3, 10, 11, 12, 14,15,16, and 17 for the following reasons.

- If the claimant (client) allocated suitable technical staff for project supervision at the beginning of the projects those defects would not have occurred. Therefore, claimant was not allowed the cost of employing full time technical staff and travelling of technical staff during the defect liability period.

- To get a favourable decision the claimant should have used the consultancy service to prepare the necessary documents submitted to arbitration. It is a decision made by the claimant. In that sense the arbitrator rejected the claim.
- The delay in completing the work and approving extensions was mainly due to the delay in getting approval for variations initiated by the owner. Therefore, the claimant is not entitled to of income due to the project delay.
- Floor concrete work was not carried out as per the contract. Those works comprised a lot of defects which were the responsibility of the Respondent and finally, those works have been condemned and the decision taken to replace. At that time the respondent also agreed on that. Therefore, the respondent is not entitled to the cost of the floor concreting work.
- Like claimant, respondent should bear the costs incurred due to arbitration and the services taken to prepare claims.
- Whenever, a payment is made, VAT portion is included it. Therefore, VAT will not be paid separately.

Furthermore, disputes related to defect rectification and delay payment with interest were recommended to pay for the relevant party by the arbitration award due to following reasons.

- Procurement of balance defects rectification work is there in respect of incomplete works. Therefore, the claim made by the claimant is in respect of work done for rectification work and therefore, it is being accepted.
- Claimant is partly responsible for not giving adequate information in the BOQ. Therefore, respondent has gone for different sizes and types of materials which ultimately created defects. However, where there were clear instructions and information the respondent failed to follow those and it also led to disputes. Therefore, the claimant was entitled to an amount calculated by the arbitrator for the cost incurred for defect rectification of the remaining works.
- Payment delays in interim bills, final bills and retention money were accepted by the arbitrator and they approved the payment with interest.

Finally, the arbitration award was referred to the courts for enforcement. Table 7.8 displays the cost incurred during the arbitration process.

Table 7 - 8 Case 1 - Types of cost in the Arbitration process

Types of cost	Cost elements	Value
Direct Cost	Cost for claim expert (both respondent and claimant)	RS. 275,000
	Arbitrator's fee (arbitrator's total fee for a case – counted 16 days. This includes sittings, reading of documents and writing an award)	RS. 960,000
	Cost for venue for three sittings (approximately)	RS. 96,000
Indirect Cost	Time for arbitration	150 days
	Overhead cost (respondent and claimant)	Respondent allocated technical staff for preparation of claim and defect rectification. Claimant allocated technical staff for claim preparation.
Hidden Cost	Opportunity cost	It is clear the business relationship of both parties has been affected badly.

7.2.6 Compare and contrast Adjudicator's decision and Arbitration Award

The adjudication decision and arbitration award produced a similar solution for the delayed payment and interest for delay. However, until the arbitration award, the payment delayed time was greater than in adjudication and therefore, the interest in delay was increased. Unlike at the time of adjudication, the defects were already rectified by the client. Therefore, the money spent on several defects was recommended to be deducted from the retention money. By the time of arbitration, the defect liability period had already expired; therefore, the arbitrator recommended releasing the retention money along with delayed interest.

The findings primarily indicate that solutions given both in adjudication and arbitration are similar. However, in arbitration unlike in adjudication, the arbitrator considered that both

parties were responsible for the issue of the quality of work. Additionally, more time spent on dispute resolution creates unnecessary costs.

Table 7 - 9 Case 1 - Arbitration attributes

Mid-Level Themes	Low- Level Themes	Behavior of Case 1 - Arbitration
Neutral Third Party	Effective case management of the neutral	Documents show that the arbitrator has indicated the importance of resolving disputes through adjudication and clearly explained the process.
	Impartiality of the neutral	Impartial.
	Knowledge in construction	45 years of construction industry experience, Chartered Engineer, 15 years of experience in construction ADR.
	Power to compel consolidation	Not applicable.
Benefits	Addressing power imbalance	Specifically, this cannot identify.
	Cost	The cost for arbitration is almost like the amount of the claim. Not only that it has taken 150 days to give the decision where both the parties had to keep on standing to provide information whenever needed.
	Ease of implementation	Can enforce the arbitrator's award using court procedures.
	Improvement of communication between parties	Parties spoke on their point of view during the meeting.
	Penalty	No penalty was given. Arbitration cost was borne equally by both the parties.
	Preservation of business relationships	No document evidence on this.
	Time for Completion	150 days. This is more than what was agreed during the preliminary meeting.
Process	Ability of the parties to appeal	Can enforce or reject the award using court procedure.
	Confidentiality of the process	Confidential.

	Control by parties	Parties appointed the arbitrator. However, after the appointment arbitrator decided on the process and it was controlled by the arbitrator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	Arbitration was performed according to the arbitration Act No 11 of 1995 Sri Lanka.
	Privacy of the proceeding	Private.
	Range of Disputes	Disputes under different categories were referred. Not only that those disputes were interrelated.
	Voluntariness	Arbitration was not a voluntary process. It is in accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision/ settlement	This is a binding settlement.
	Consensus of the parties for settlement	Parties agreed to follow.
	Fairness	No complaints on this.
	Possibility for Creative Settlement	Can assume since the award was accepted by both parties.
	Scope of remedy to satisfy interest	The settlement was based on the evidence.

Table 7.9 reveals the following. First, it is about a successful arbitration. However, the arbitration process has taken nearly five months to produce the arbitration award. Not only that the cost of the arbitration process was similar to the cost of the total claim amount. Further, the award was forwarded to the court for enforcement.

7.3 Case Study – Case 2

Case 2 is about a public sector university hostel building project signed between a government institution and a private contractor. The contract agreement was signed between the parties on 18th November 2013. However, the construction was started after receiving the letter of acceptance and before signing the contract agreement. The contract period was two years with 365 days defect liability period. The disputes that occurred out of the contract were first referred to adjudication and when that failed referred to arbitration. Detailed information on Case 2 is listed in Table 7.10.

Table 7 - 10 Case 2 - Project information

Case No	Case 2
Contract	Construction of two hostel building
Client	Public sector University
Contractor	Private
Consultant	Government owned construction company
Procurement committee	Public sector institution
Agreed contract Amount excluding VAT	RS. 98,143,860/-
Bid date	June 2013
Date of letter of acceptance	21 st October 2013
Agreement signed	18 th November 2013
Contract start date	04 th November 2013 (after receiving the letter of acceptance and before signing the contract agreement)

Date of Termination by client	15 th July 2014
Contract period	Two years
Handing over site	N/A
Defect notification period	365 days
Form of Contract	CIDA/SBD/02-02 nd Edition published in Jan 2007
Bidder's qualification	C1
Dispute Clause	19.2 Dispute Resolution
Adjudicator appointment	October 2017
Preliminary meeting date	26 th October 2017
Statement of claimed submitted on 27 th November 2017	After 1 month from the preliminary meeting
Statement of response on 10 th January 2018	After 1 and half months time
2 nd hearing at SLNAC	22 nd February 2018
Claimant reply statement	22 nd March 2018
Final written submission by claimant	24 th July 2018
Final written submission by Respondent	Did not submitted
Adjudicator's decision	10 th October 2018
Notice of dissatisfaction for adjudicator's decision	07 th November 2018 (however, letter was posted on 08 th November 2018, after 28 days of adjudicator's decision)
Appointing arbitrator	27 th December 2018
Preliminary Hearing	16 th January 2019
Arbitration Award	8 th February 2019

The contract was terminated by the client due to the delay in progress and several other “contractor-related disputes”. The disputes that arose due to the termination were referred

to the adjudication as per the Dispute resolution clause 19.2 of the contract agreement. Clause 19.2 is as follows.

“Any dispute of whatever nature arising out of or in relation to this agreement shall in the first instance be attempted to be resolved by way of adjudication in accordance with the adjudication procedure set for in Clause 19.3”.

7.3.1 Adjudication

Adjudication was held nearly three years after the contract termination. The eight disputes referred to adjudication along with the adjudicator’s decision are presented in Table 7.11.

Table 7 - 11 Disputes referred to Adjudication by the contractor

No	Description	The party initiated the claim	Dispute category	Adjudication decision
Dispute 1	The engineer advised the client in his evaluation report to appoint a Technical Evaluation Committee (TEC) to observe and recommend the Engineer’s evaluation. But it was not in accordance with the terms of the contract.	Contractor	Human behaviour-related – Unfair behaviour	Adjudicator considered this as an abdication of the engineer’s authority and a violation of the contract.
Dispute 2	The Engineer was required to agree or determine the entitlement of the contractor for a claim submitted by him and there are no contractual provisions in the contract for a TEC or any third party to review and open up such determinations given by the Engineer.	Contractor	Human behaviour-related – Unfair behaviour	Adjudicator considered this as an abdication of the engineer’s authority and a violation of the contract.

Dispute 3	Payment for losses suffered and expenses incurred by it due to the termination of the contract by the client.	Contractor	Owner-related – Suspension of work	Adjudicator recommended paying
Dispute 4	Payment for performance security, advance payment guarantees and various insurance policies.	Contractor	Owner-related – Suspension of work	Adjudicator recommended paying
Dispute 5	Money spent for preparatory works.	contractor	Owner-related – Suspension of work	Adjudicator recommended paying
Dispute 6	Other expenses incurred due to termination	Contractor	Owner-related – Suspension of work	Adjudicator recommended paying
Dispute 7	Payment for unrecovered overheads.	Contractor	Owner-related – Suspension of work	Adjudicator recommended paying
Dispute 8	nullify all the disputes mentioned by the contractor and since the contractor abandoned the site, contractually employer can encash performance bond and advance bond	Client	Contractor – inappropriate claim	Client is not entitled to terminate the contract

Out of the eight disputes listed in Table 7.11, five are owner-related disputes. However, the reason for those listed disputes in Table 7.11 is the contractor's poor work progress which is displayed in the Figure 7.2.

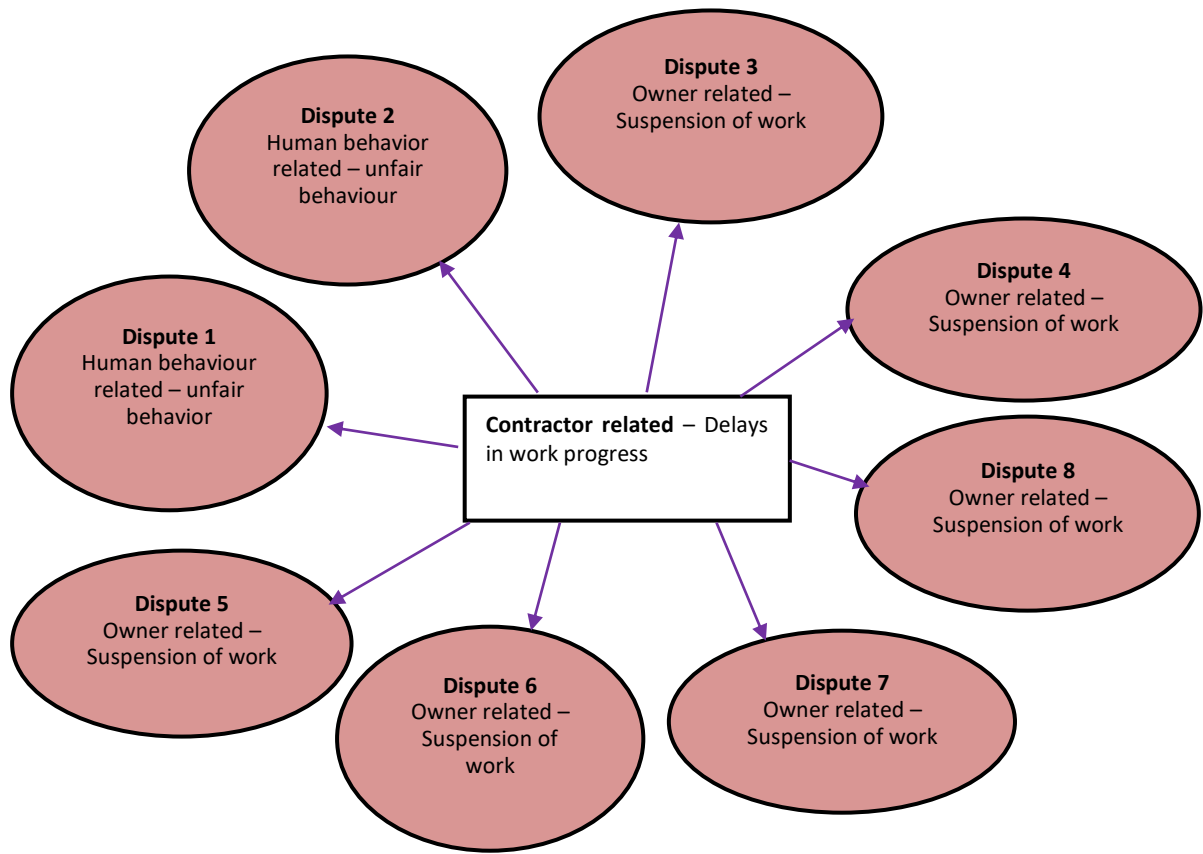


Figure 7 - 2 Case 2, Adjudication - Link between referred disputes.

By Dispute 8 in Table 7.11 the client requested to nullify all the other listed disputes in the table claimed by the contractor. Further, the client explained that he is contractually entitled to encashment of the performance and advance bond, since the contractor abandoned the site.

The adjudicator submitted his decision on 10th October 2018 after taking one year for the process. Way before the adjudication, both the parties took three years to agree and appoint an adjudicator through CIDA. During the time of adjudication, the parties spent more time in document preparation. Further, the adjudication in relation to document preparation was affected by the trade union activities conducted by the non-academic staff of the university. Cost is another attribute that parties had to spend on. Table 7.12 presents the cost factors of the adjudication process.

Table 7 - 12 Case 2 - Types of Cost in Adjudication process

Type of cost	Cost elements	Value
Direct cost	Cost for claim expert (respondent & claimant)	RS. 150,000
	Adjudicator's fee	RS. 400,000
	Cost for venue (approximately)	RS. 35,000
Indirect cost	Extra time taken for adjudication decision	337 days
	Overhead cost (claimant)	Rs. 9,982,761.65
Hidden cost	Relationship cost	Employer and contractor have lost faith in their relationship.

7.3.2 Reason to reject Adjudicator's decision

The client claimed that he was informed by the government higher department on the tender process in relation to the contract that there was large-scale fraud. Therefore, the client claiming the following clause, submitted the notice of disagreement to the contractor on adjudication.

“With the available provision on Law of Contract and Common Law, for any corruption, allegation or fraudulent matter of fact, the affected party can terminate and cancel the contract”

Table 7 - 13 Case 2 - Adjudication attributes

Mid-Level Themes	Low- Level Themes	Behavior of Case 2 - Adjudication
Neutral Third Party	Effective case management of the neutral	Documents show that the adjudicator has indicated the importance of resolving disputes through adjudication and clearly explained the process.
	Impartiality of the neutral	Impartial
	Knowledge in construction	35 years of construction industry experience, chartered engineer, 10 years of experience in construction ADR.
	Power to compel consolidation	Not applicable
Benefits	Addressing power imbalance	Specifically, this cannot identify.
	Cost	Compared to the claim amount parties together spent nearly half the claim amount. Not only that it has taken 337 days to give the decision where both the parties had to keep on standing to provide information whenever needed.
	Ease of implementation	Client did not agree and submitted the notice of disagreement.
	Improvement of communication between parties	Parties spoke on their point of view during the meeting
	Penalty	No penalty was given. Adjudication cost was beard equally by both the parties.
	Preservation of business relationships	No document evidence on this
	Time for Completion	337 days. This is more than what is written in the contract agreement.
Process	Ability of the parties to appeal	Parties cannot appeal but referred disputes to arbitration.
	Confidentiality of the process	Confidential.

	Control by parties	Parties requested CIDA to appoint the adjudicator. However, after the appointment adjudicator decided on the process and it was controlled by the adjudicator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	Adjudication was performed as explained in the contract agreement.
	Privacy of the proceeding	Adjudication was held at SLNAC where no unauthorized person was allowed to come in.
	Range of Disputes	Disputes under different categories were referred. Not only that those disputes were inter related.
	Voluntariness	Adjudication was not a voluntary process. It is in accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision/ settlement	This is not a binding decision. Disagreeing party (client) referred to arbitration.
	Consensus of the parties for settlement	Client did not agree on the decision.
	Fairness	Client disagreed with the decision claiming the contract itself is a fraud.
	Possibility for Creative Settlement	Cannot decide since it is being rejected.
	Scope of remedy to satisfy interest	Not applicable, since the decision was rejected on other grounds.

Table 7.13 displays the preliminary analysis of the adjudication in case study 2 against theoretical attributes. The table reveals interesting information about the adjudication practice in Sri Lanka. Firstly, the table shows that the neutral third party has performed fairly as an adjudicator. Secondly, the time and the cost spent on adjudication are large. Also, it further confirmed that adjudication is not a voluntary process, and it is a contractual obligation. Finally, it can conclude the table does not encourage the use of adjudication as a dispute resolution method due to the time, cost, and the unenforceability of the decision.

Since the client would not agree to follow the adjudicator's decision, the parties referred the disputes to arbitration as per the contract agreement.

7.3.3 Arbitration

According to the agreement, the disagreeing party shall refer to the arbitration within 28 days after receiving the adjudicator's decision. However, the client failed to express an interest to reject and refer to arbitration within the given time. Therefore, the arbitrator took initiative to inform both the parties about the situation and obtain written consent to proceed with arbitration as per the following clause 19.3.

“The adjudicator shall not act as an Arbitrator. The decision of the Adjudicator shall be deemed final and binding on the Parties if neither Party refers the dispute to arbitration in accordance with Sub-Clause 19.5 within twenty-eight (28) days of the adjudicator's determination”.

Out of the three arbitrators proposed by the university, the contractor selected one arbitrator. Then the university (claimant) appointed the particular arbitrator on 27th December 2018. After having four hearings including the preliminary meeting within 43 days the arbitrator gave the award on 8th February 2019.

There were 9 disputes referred to arbitration. The first eight disputes are similar to the disputes in Table 7.11 and dispute 9 was requesting cost for arbitration from the defeated party. Even though there was no written evidence of the mentioned fraud that happened during the tendering stage of the contract, the arbitrator considered that the contract was unfavourable

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for the client. However, according to the contract agreement the client was considered to violate the contractual provisions by terminating the contract without providing proper notices. Considering all the above the arbitrator recalculated the amount claimed by the contractor and recommended to pay disputes 3,4,5, and 6 listed in table 7.11 for the recalculated amount. Dispute 9 was rejected and recommended to be borne equally by both parties.

Finally, the arbitration award was referred to the court for enforcement. The cost spent for arbitration is listed in the table below.

Table 7 - 14 Case 2 - Type of cost in Arbitration

Type of cost	Cost elements	Value
Direct cost	Cost for claim expert (respondent & claimant)	RS. 250,000
	Arbitrator's fee	RS. 375,000
	Cost for venue (approximately)	RS. 22,000
Indirect cost	Time is taken for arbitration award	43 days
	Overhead cost (claimant)	Claimant requested an overhead cost.
Hidden cost	Relationship cost	Employer and contractor has lost faith in their relationship.

7.3.4 Compare and contrast the adjudicator's decision and arbitrator's award.

Even though the client was informed about the fraud in the tendering process of the contract, and it affected the contract badly, the adjudicator did not consider it in his decision. However, the arbitrator considered the client's grievance regarding the incorrect tendering process, and the amount to pay for the contractor by the client with respect to termination was reduced by providing suitable evidence.

The findings primarily indicate the amount of money recommended by the adjudicator being insensitive to the client's grievance was the major reason to disagree with the adjudicator's decision.

Table 7 - 15 Case 2 - Arbitration attributes

Mid-Level Themes	Low- Level Themes	Behavior of Case 2 - Arbitration
Neutral Third Party	Effective case management of the neutral	Documents show that the arbitrator has indicated the importance of resolving disputes through arbitration and clearly explained the process.
	Impartiality of the neutral	Impartial
	Knowledge in construction	45 years of construction industry experience, chartered engineer, 15 years of experience in construction ADR.
	Power to compel consolidation	Not applicable
Benefits	Addressing power imbalance	Specifically, this cannot identify.
	Cost	Including the overhead cost, the cost for arbitration is similar to the claim amount.
	Ease of implementation	Can enforce the arbitrator's award using court procedures.
	Improvement of communication between parties	Parties spoke on their point of view during the meeting
	Penalty	No penalty was given. Arbitration cost was borne equally by both the parties.
	Preservation of business relationships	Both parties' lost faith in their relationship
	Time for Completion	43 days
Process	Ability of the parties to appeal	Can enforce or reject the award using court procedure.
	Confidentiality of the process	Confidential.

	Control by parties	Parties appointed the arbitrator. However, after the appointment arbitrator decided on the process and it was controlled by the mediator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	Arbitration was performed as explained in the contract agreement.
	Privacy of the proceeding	Private.
	Range of Disputes	Disputes under different categories were referred. However, all the disputes have emerged from one dispute.
	Voluntariness	Arbitration was not a voluntary process. It is in accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision/settlement	This is a binding settlement.
	Consensus of the parties for settlement	Parties agreed to follow
	Fairness	No complain on this.
	Possibility for Creative Settlement	Can assume since the award was accepted by both parties.
	Scope of remedy to satisfy interest	The settlement was based on the evidence.

Table 7.15 illustrates several positive pieces of information about the Sri Lankan arbitration practice. The main point was the parties accepted the arbitration decision. Secondly, the time taken for arbitration is fair and very low compared to adjudication. The disputes referred to arbitration have emerged from only one dispute. Therefore, it can be assumed less complex and interrelated disputes take less time to complete the arbitration. However, both the adjudicator and arbitrator had similar backgrounds in relation to their educational qualifications. But the main difference between them is the greater experience in industry and ADR of the arbitrator.

7.4 Case Study – Case 3

The next case study is about the construction of 941 housing units for low-income government employees. It is a design and build contract where the client is a government authority and the contractor is a leading private construction company in Sri Lanka. Details of the case are displayed in Table 7.16. The dispute resolution method used in this case study was dispute adjudication board (DAB) which ultimately successfully completed and became a binding decision with the parties' consent.

Table 7 - 16 Case 3 - Project information

Case No	Case 3
Contract	Construction of 941 housing units for low-income government employees
Client	Government Authority
Contractor	CIDA registered contractor
Procurement committee	Government Authority
Agreed contract Amount excluding VAT	Total cost RS. 3,246,450,000/- (RS. 3,450,000/- one housing unit)
Bid date	20 th March 2014
Date of letter of acceptance	08 th April 2014
Agreement signed	02 nd December 2015
Contract start date	11 th July 2014
Schedule date of completion	10 th January 2017

Actual Date of completion/ contract completion	Block A – 30 th October 2017 Block B,C& D – 31 st March 2018
Contract period	30 months
Date of completion/ contract completion (taking over from contractor).	31 st March 2018
Defect notification period	365 days
Form of Contract	Design and Build contract
Bidder's qualification	C 1
Dispute Clause	Clause 19.2 Appointment of the Dispute adjudication board.
DAB appointment	19 th December 2018
Preliminary meeting date	27 th February 2019 at 10.30 am at SLNAC
Statement of claimed submitted on (Dispute 1,2 and 3)	18 th March 2019
Statement of response on Dispute 1	21 st May 2019
Statement of reply by claimant Dispute 1	07 th June 2019
Hearing – Dispute 1	25 th June 2019 at 10.30 am at SLNAC
Final submission by claimant – Dispute 1	17 th July 2019
Final submission by respondent – Dispute 1	25 th July 2019
Statement of respond – dispute 2 with extension	12 th June 2019
Statement of answer claimant – Dispute 2	21 st June 2019
Final written submission by claimant – Dispute 2	19 th July 2019
Final written submission by respondent – Dispute 2	22 nd July 2019

Statement of respond – dispute 3	18 th June 2019
Statement of answer claimant – Dispute 3	05 th July 2019
Hearing – dispute 2 & 3	25 th June 2019 at 10.30 am at SLNAC
Statement of answer claimant – Dispute 3	12 th July 2019
Statement of answer respond – dispute 3	20 th July 2019
DAB decision	23 rd September 2019

The contract agreement formed under the form of contract ICTAD/SBD/04, First Edition (Reprinted), May 2003 and the clause for dispute resolution is Clause 19.2 – Disputes. Part of the clause is as follows;

“Disputes shall be adjudicated by a Dispute Adjudication Board (DAB) in accordance with Sub-Clause 19.4 [obtaining dispute adjudication board’s decision]. The parties shall jointly appoint a DAB by the date 28 days after a party gives notice to the other party of its intention to refer a dispute to a DAB in accordance with Sub-Clause 19.4”.

The clause further explains that a DAB shall consist of three members and the DAB shall give its decision within 84 days after receiving the dispute reference. It further explains if parties did not agree on the appointment of members of DAB or the chairmen of DAB, CIDA will appoint them on behalf of the parties.

7.4.1 Dispute Adjudication Board

During the preliminary meeting parties agreed on following timeline in Table 7.17 which was proposed and presented by DAB for adjudication.

Table 7 - 17 Schedules for Dispute Adjudication process

	Dispute no. 1	Dispute no. 2	Dispute no. 3
Statement of response from the employer	21 st day from Day one	35 th day from Day one	49 th days from Day one
Statement of answer from the contractor	35 th day from Day one	49 th Day from Day one	63 rd day from Day one
Hearing on dispute	The date of hearing will be notified by the DAB later. The number of dates for the hearing could vary, depend on the issues/material raised by the parties		
The decision on disputes	At the end of the hearing on each dispute the DAB will inform the date of issuance of the decision		

There were three disputes referred to DAB by the statement of claim. During the preliminary meeting with the consent of the parties DAB decided to take the three referred disputes separately. The three disputes are taken separately even in one DAB.

The researcher was able to interview one member of the DAB. There he explained on several situations that a DAB will take disputes separately. They are as follows;

- Referred disputes are too complex to handle together
- Time given in the agreement for ADR is limited based on the number of disputes to handle. Therefore, they will be taken separately and those are within the time limit. But there can be time overlapping between the times of resolution for each dispute.

Disputes referred to DAB are listed in Table 7.18.

Table 7 - 18 Case 3 - Disputes referred to DAB

No	Description of the dispute	The party initiated the claim	Dispute category	DAB decision
Dispute 1	Additional cost incurred as a result of non-availability of duty concession for reinforcement steel.	Contractor	External factors related – Legal and economic factors	Approved for a calculated cost by DAB.
Dispute 2	Additional cost of finance - Additional cost of finance due to non-settlement of due payment within 6 months.	Contractor	Owner related – Payment delay	Approved for a calculated cost by DAB.
Dispute 3	Additional cost of preliminaries during the extended period of time	Contractor	Contractor related – Time extensions	Approved for a calculated cost by DAB.

Three disputes listed in Table 7.18 can be categorized under “External factors related disputes”, “contractor related disputes”, and “Owner related disputes”. After referring to the submitted claim the reasons for the above disputes are the extended project time beyond the control of the contractor. Client approved the time extension without the financial obligations. Since there was a tax concession provided by the government only for the initial contract period the cost of the project increased during the extended project time period. Therefore, the following figure displays the reason for the disputes in Table 7.18.

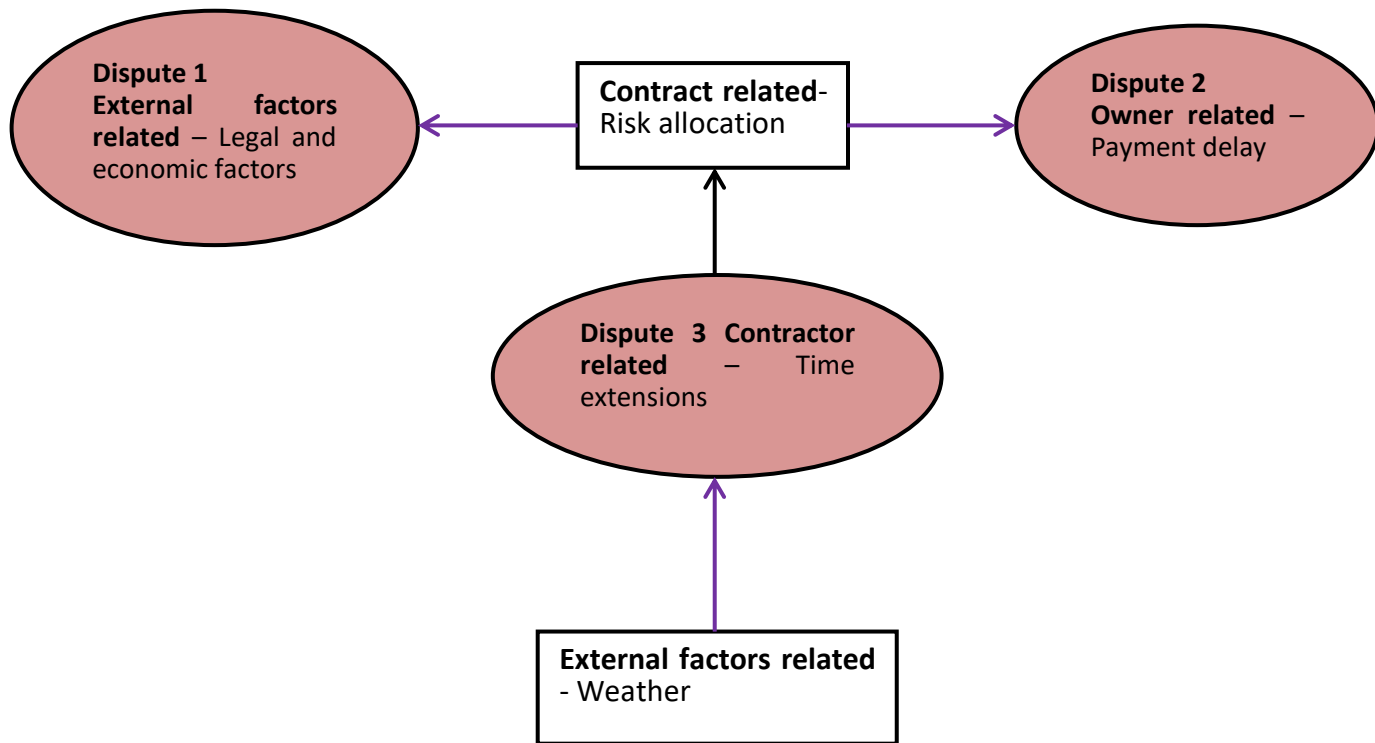


Figure 7 - 3 Case 3, Dispute Adjudication Board (DAB)- Link between referred disputes.

This project received tax concession for several materials for a certain time period. As shown in the Figure 7.4 due to the adverse weather conditions the contractor requested a time extension. The extended time was beyond the tax concession period. Therefore, the contractor requested an excessive amount of money (tax money) spent for material purchasing and preliminaries.

The DAB decision was given for all three disputes on the 23rd September 2019 after nearly nine months. DAB recommended making the payment for all three disputes referring to the calculated amount by the DAB.

DAB went for nearly 270 days to finalize and give the decision; it has taken an extra 186 days from the initial plan given by DAB. The cost for DAB is displayed in Table 7.19.

Table 7 - 19 Case 2 - Types of cost in Adjudication process

Type of cost	Cost elements	Value
Direct cost	Cost for claim expert (respondent & claimant)	RS. 200,000
	Adjudicators' fee- total anticipated estimated cost of daily fee for the services for DAB member is $65000 \times 12 = 780000$ /. Therefore, for three members – $780000 \times 3 = 2,340,000$	RS. 2,340,000
	Cost for venue- Preliminary meeting- 1 day	Rs. 40,000
Indirect cost	Extra time taken for DAB	186 days
Hidden cost	Relationship cost	Disputes resolved without getting damage to their relationship.

Table 7.20 illustrates the preliminary analysis of the DAB practice in the Sri Lankan construction industry with respect to the theoretical attributes. It is apparent that DAB in case study 3 has more positive attributes than negative ones. Similar to other cases, DAB is also not a voluntary process, does not impose a penalty, and becomes a binding decision since the disputing parties agreed to follow the decision. Even though the referred disputes are inter-related, due to the complexity of the disputes DAB decided to hear the disputes separately. However, the proposed time plan was extended due to the delay in document submission by both parties.

Finally, it can be concluded the main reason for the delay in ADR is the delay in document submission by both parties.

Table 7 - 20 Case 3 - Adjudication attributes

Mid-Level Themes	Low- Level Themes	Behavior of Case 1 - Adjudication
Neutral Third Party	effective case management of the neutral	DAB explained the importance of resolving disputes through ADR and clearly explained the process.
	Impartiality of the neutral	No evidence on this.
	Knowledge in construction	Yes. All three members in DAB possess undergraduate, postgraduate and professional qualifications and law degree qualification along with the experience on construction industry dispute resolution
	Power to compel consolidation	Not applicable.
Benefits	Addressing power imbalance	Yes, it was done through DAB calculations.
	Cost	Cost for DAB was one tenth of claim amount. Not only that it has taken 186 days extra from the initial time plan.
	Ease of implementation	Both parties agreed on DAB decision and it was enforced.
	Improvement of communication between parties	Communication was there to explain their own point of view on referred disputes.
	Penalty	No penalty was given. DAB cost was borne equally by both the parties.
	Preservation of business relationships	Yes
	Time for Completion	270 days.
Process	Ability of the parties to appeal	Cannot appeal but can reject by giving the notice of dissatisfaction and go for the next step of ADR.

	Confidentiality of the process	Confidential.
	Control by parties	Parties appointed the DAB. However, after the appointment DAB decided on the process and it was controlled by the mediator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	DAB was performed as explained in the contract agreement.
	Privacy of the proceeding	Private.
	Range of Disputes	Disputes under different categories were referred.
	Voluntariness	DAB was not a voluntary process. It is in accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision/ settlement	Since parties agreed to follow the decision, it became binding.
	Consensus of the parties for settlement	Parties agreed to follow.
	Fairness	No complaint on this.
	Possibility for Creative Settlement	Can assume since the award was accepted by both parties.
	Scope of remedy to satisfy interest	Settlement was based on the evidence.

7.5 Case study – Case 4

The case study 4 is about a public sector hospital building project. The employer is the ministry and the contractor is a CIDA registered contractor. Details of the project are displayed in Table 7.21.

Table 7 - 21 Case 4 - Project information

Case No	Case 4
Contract	Construction of two storey MRI scanner unit
Client	Ministry
Contractor	CIDA registered contractor
Procurement committee	Ministry
Agreed contract Amount excluding VAT	Rs. 21,810,680.02
Bid date	Not available
Date of letter of acceptance	28 th July 2015
Agreement signed	19 th September 2015
Contract start date	26 th August 2015
Schedule date of completion	26 th February 2016 But several extensions were given.
Contract terminated on	11 th April 2019
Contract period	182 days
Handing over site	N/A
Defect notification period	365 days
Form of Contract	CIDA/SBD/01 Second edition January 2007
Bidder's qualification	C4
Dispute Clause	Clause 24- Dispute Resolution
Adjudicator appointment	15 th July 2020
Preliminary meeting date	28 th July 2020

Statement of claimed submitted on	8 th October 2020
Statement of response	21 st November 2020
Statement of reply by claimant	9 th December 2020
Clarifications responded by claimant	6 th December 2020 and 4 th January 2021
Hearing 1	20 th January 2021
Final submission by claimant	2 nd February 2021
Final submission by respondent	12 th February 2021
Adjudicator's decision	20 th April 2021

Although the letter of acceptance stated the start date as 14 days from the letter of acceptance (which should be 11th August 2015) the engineer has sent a letter confirming the starting date as 26th August 2015 due to the delay in the handing over process. In a similar pattern, although the contract signing date should be 28 days from the letter of acceptance, the actual date of contract signing was 19th September 2015. Therefore the employer delayed 104 days to pay the advance payment even though advanced bond was submitted by the contractor on time. It observed the contract was awarded without having firm commitment of funds from the employer.

The contract was signed under the form of contract CIDA/SBD/01 Second Edition January 2017 and the clause 24.1 - Dispute Resolution clause is as follows;

“Any dispute of whatever nature arising out of or in relation to this agreement shall in the first instance be attempted to be resolved by way of adjudication in accordance with the adjudication procedure set forth in Clause 25”.

7.5.1 Adjudication

A sole adjudicator was appointed by CIDA at the request of the disputing parties. Eight disputes were referred to adjudication by the claimant (contractor). Disputes in the referral to adjudication are listed in Table 7.22.

Table 7 - 22 Case 4 - Disputes referred to Adjudication by the contractor

No	Description of the dispute	The party initiated the claim	Dispute category	Adjudication decision
Dispute 1	Delay in providing drawings	Contractor	Design related – Availability of information	Recommend to pay for machine idling cost.
Dispute 2	Delay in removal of service lines	Contractor	Owner related – Late giving possession	Recommend to pay water and electricity bills.
Dispute 3	Delay due to variations and omissions	Contractor	Owner related – Change of scope	Recommend paying for the loss of profit due to omissions and re-measuring the variations and do the payment.
Dispute 4	Non-receiving of balance payments	Contractor	Owner related – Payment delay	Recommended to pay the balance payment.
Dispute 5	Price Escalation	Contractor	Contractor – Delay in work progress	Recommend to pay the price escalation
Dispute 6	The claim for the termination	Contractor	Owner related – Suspension of work	Recommend to pay the loss due to termination
Dispute 7	Financial charges for the delay payments	Contractor	Owner related – Payment delay	Recommend to pay for interests
Dispute 8	Loss of opportunity	client	Owner related – Suspension of work	Rejected.

- Dispute 1 – Soil investigation was carried out after the commencement of the project. Therefore, the structural drawings were delayed. Further, BOQ was prepared without the structural drawings. Because of the above machines were idling.

- Dispute 2 – Relocation of service lines such as sewer, water and electricity was difficult due to the unavailability of layout drawings. Since the contractor's team has already occupied the site, water and electricity bills were requested to be paid by the client.
- Dispute 3 – According to the client's request several items in the initial BOQ were omitted and a new item introduced. The newly introduced item was a roof slab instead of asbestos roofing. The change was considered as a scope change.
- Dispute 4 – Advance payment was delayed by 102 days. This was considered as a prevention of work performance by financial interruptions.
- Dispute 5 - Due to the disputes initiated through variations became the reason to delay in work progress and it ultimately presented as a price escalation.
- Dispute 6 – The termination of the work was initiated by the client to give the scope changes to a new contractor.
- Dispute 7 – Client failed to make the payment according to the contract agreement.
- Dispute 8 – Due to the unlawful termination, the contractor lost the opportunity to perform the contract.

Figure 7.4 Displays the inter-relationships among the disputes presented in Table 7.22.

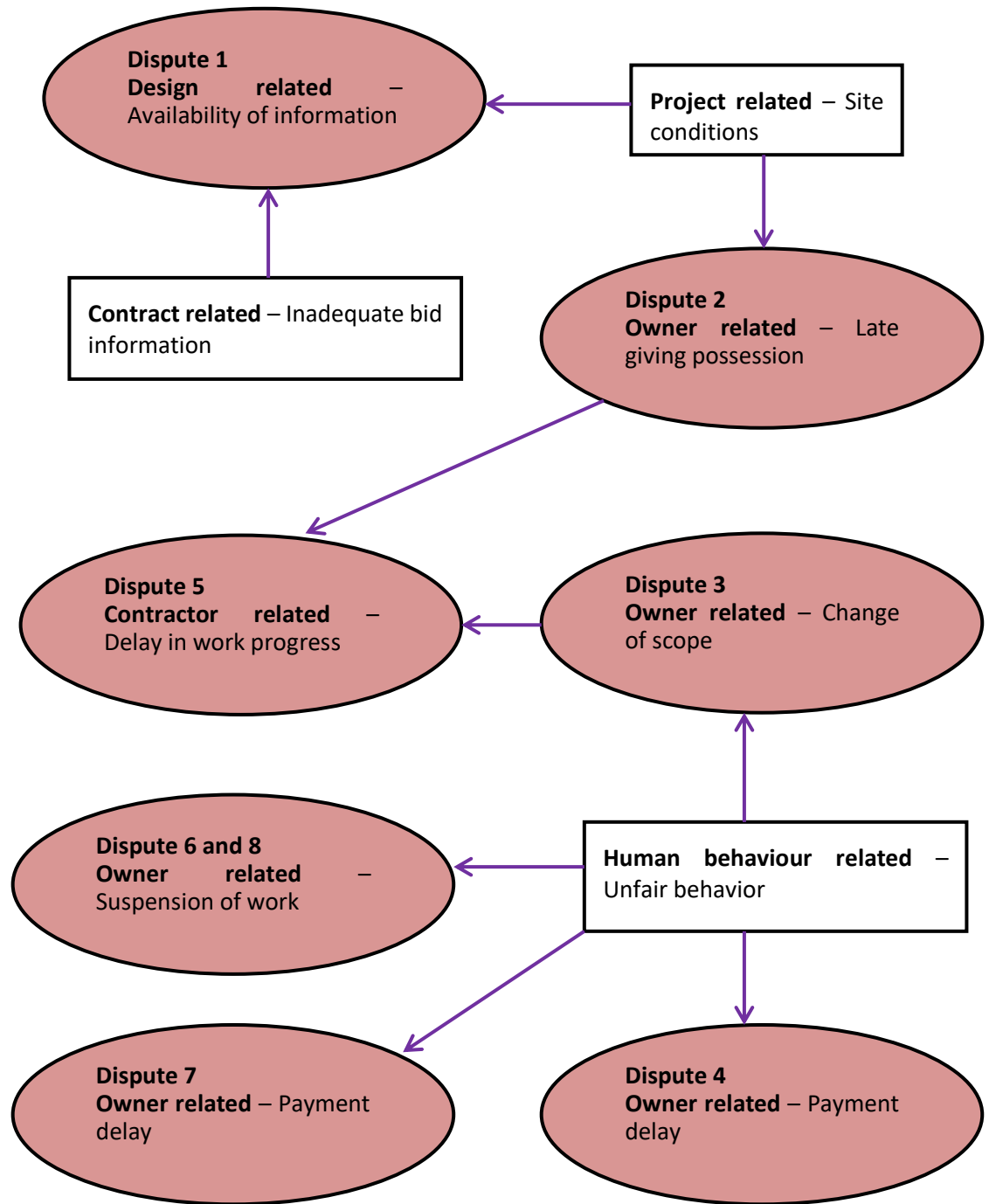


Figure 7 - 4 Case 4, Adjudication - Link between referred disputes.

Except dispute 8 all other disputes were recommended by the adjudicator after recalculating the claimed amount. Dispute 8 was rejected since there was no provision in the contract to

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make a payment for loss of opportunity. However, the overhead claimed by the contractor was recommended to be paid at the amount recalculated by the adjudicator.

After nearly nine months of the adjudication process the parties received the adjudicator's decision on the 20th April 2021. It was evident from the documents that both parties were happy to follow the adjudicator's decision. The Table 7.23 displays the cost spent for adjudication.

Table 7 - 23 Case 4 - Types of cost in Adjudication

Type of cost	Cost elements	Value
Direct cost	Cost for claim expert (respondent & claimant)	RS. 200,000
	Adjudicators' fee	RS. 500,000
	Cost for venue (approximately)	RS. 45,000
Indirect cost	Extra time taken for adjudication decision (approximately)	186 days
Hidden cost	Relationship cost	Disputes resolved without getting damage to their relationship.

The preliminary analysis of the adjudication of case study 4 against the theoretical attributes is illustrated in the Table 7.24.

Table 7 - 24 Case 4 - Adjudication attributes

Mid-Level Themes	Low- Level Themes	Behavior of Case 4 - Adjudication
Neutral Third Party	effective case management of the neutral	Documents show that the adjudicator has indicated the importance of resolving disputes through adjudication and clearly explained the process.
	Impartiality of the neutral	Impartial
	Knowledge in construction	30 years of construction industry experience, chartered engineer, 10 years of experience in construction ADR.
	Power to compel consolidation	Not applicable
Benefits	Addressing power imbalance	Specifically, this cannot identify.
	Cost	Cost for adjudication is very little compared to claim amount.
	Ease of implementation	If both parties agree only.
	Improvement of communication between parties	Communication was there to explain their own point of view on referred disputes.
	Penalty	No penalty was given. Adjudicator's cost was borne equally by both the parties.
	Preservation of business relationships	No evidence on this
	Time for Completion	270 days.
Process	Ability of the parties to appeal	Cannot appeal but can reject by giving the notice of dissatisfaction and go for the next step of ADR.
	Confidentiality of the process	Confidential.

	Control by parties	Parties appointed the adjudicator. However, after the appointment adjudicator decided on the process and it was controlled by the adjudicator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	DAB was performed as explained in the contract agreement.
	Privacy of the proceeding	Private.
	Range of Disputes	Disputes under different categories were referred.
	Voluntariness	Adjudicator was not a voluntary process. It is in accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision or settlement	Yes, since both parties agreed to follow.
	Consensus of the parties for settlement	Parties agreed to follow.
	Fairness	No complain on this.
	Possibility for Creative Settlement	Can assume since the award was accepted by both parties.
	Scope of remedy to satisfy interest	Settlement was based on the evidence.

Table 7.25 displays the attributes of a successful adjudication. The major success in the presented adjudication is the acceptance of the adjudicator's decision and that the disputes were resolved accordingly. However, the time taken for the adjudication process is nearly half a year more than expected. The reason for the time extension is the extra time taken for document submission.

7.6 Case study – Case 5

Case study 5 dealt with the construction and installation of a waste water treatment plant at the request of Sri Lankan government. The contractor is a CIDA registered contractor and the form of contract is CIDA/SBD/01 Second Edition, January 2007. The scope of the works involved construction of sedimentation tanks, sludge drying beds, bund formation works for existing lagoons, construction of two sludge pump stations, pipe works from pump stations to the lagoons and sludge drying beds and the related landscaping works. Detailed information on case 5 are displayed in Table 7.25.

Table 7 - 25 Case 5 - Project information

Case No	Case 5
Contract	Construction and installation of waste water treatment plant
Client	Public sector project
Contractor	CIDA registered contractor
Procurement committee	Government procurement committee.
Agreed contract Amount excluding VAT	150,250,000.00
Date of letter of acceptance	1 st of February 2012
Agreement signed	20 th February 2012
Contract start date	23 rd February 2012
Schedule date of completion	20 th December 2012
Contract period	10 months
Date of termination	18 th April 2013

Defect notification period	365 days
Form of Contract	CIDA/SBD/02 Second edition January 2007
Bidder's qualification	C 1
Dispute Clause	Clause 24.0 – Dispute Resolution
Adjudicator appointment	02 nd July 2013
Preliminary meeting date	20 th July 2013
Statement of claimed submitted on	14 th August 2013
Statement of response	05 th September 2013
Statement of reply by claimant	23 rd September 2013
Hearing	5 th October 2013
Claimant filed further submissions	28 th October 2013
Respondent filed further submissions	18 th November 2013
Final submission by claimant	04 th December 2013
Final submission by respondent	16 th December 2013
Adjudicator's decision	04 th April 2014

Several time extensions were approved by the client due to the unforeseen situations like unexpected rock excavations before pipe lying, obtaining material approval from engineer and preparation of rates breakdowns for new items not contained in the Bill of Quantity.

Several discussions took place between the engineer and contractor in order to resolve the disputes which arose due to the aforesaid issues and several other issues. However, the contractor did not agree with the decision given by the engineer and there was much delay in project progress. Finally, the client terminated the contract. The contractor disagreed with the termination and referred the disputes to adjudication after obtaining the client's consent.

7.6.1 Adjudication

There were 6 disputes in the adjudication referral. Those are presented in Table 7.26.

Table 7 - 26 Disputes referred to Adjudication by the contractor

No	Description of the dispute	The party the claim initiated	Dispute category	Adjudication decision
Dispute 1	Wrongful termination of the contract	Contractor	Owner related – Suspension of work	Both parties acted wrongly.
Dispute 2	Delay in processing the Claimant's interim payment applications and / or variations and non-payment of interim payment application and/ or variations.	Contractor	Owner related – payment delay	Recommended to make the payment based on the adjudicator's calculations
Dispute 3	Wrongful and /or unlawful demand on the sums of bonds and guarantees	contractor	Human behaviour related – unfair behaviour	Recommended not to do the encashment of bonds and guarantees.
Dispute 4	Request to release the contractor's machineries which are in engineer's custody	Contractor	Human behaviour related – unfair behaviour	Recommended to release the machineries to the contractor
Dispute 5	Request to issue the substantial completion certificate	contractor	Human behaviour related – unfair behaviour	Adjudicator advised the engineer
Dispute 6	Liquidated damage incurred due to the delay of work progress	client	Contractor related – delay in work progress	Client is not entitled for a liquidated damage beyond the extended date of completion.

Those disputes were the reason for the termination. Therefore, under the matters to be determined, the adjudicator needed to decide whether the termination was legitimate or wrongful. The adjudicator was also required to determine whether the claimant was entitled to all the termination related claims including a few other claims or whether the respondent was entitled to recover the sums claimed in the statement of defence in the form of a “counter claim”.

The relationship between the disputes referred to adjudication is presented in Figure 7.5.

It was evident from the documents, that the delay in owner furnished materials is one of the major reasons for those disputes presented in Table 7.26

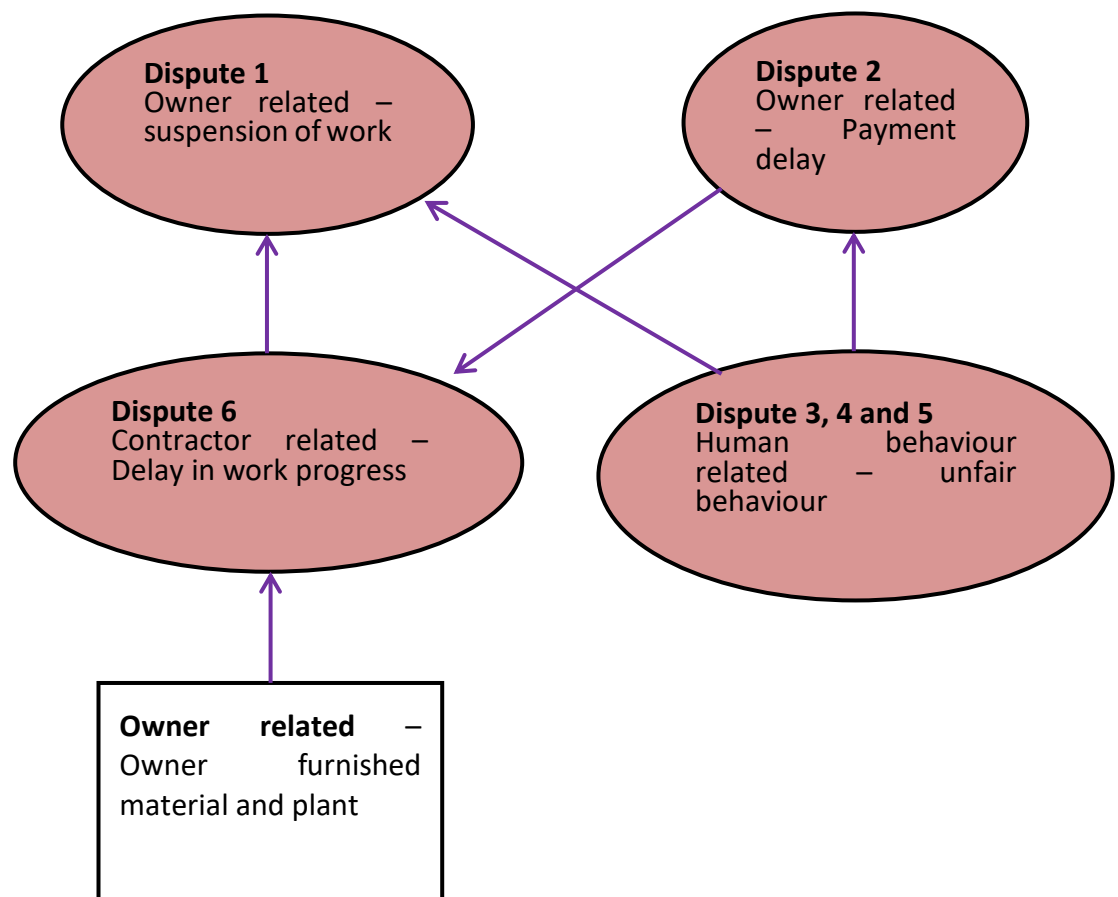


Figure 7 - 5 Case 5, Adjudication - Link between referred disputes.

The adjudicator did not consider the termination by the client was legal in this project. However, the figure reveals that disputes are interrelated.

Table 7 - 27 Case 5 - Types of cost in Adjudication

Type of cost	Cost elements	Value
Direct cost	Cost for claim expert (respondent & claimant)	RS. 500,000
	Adjudicators' fee	RS. 600,000
	Cost for venue (approximately)	RS. 90,000
Indirect cost	Extra time taken for adjudication decision (approximately)	96 days
Hidden cost	Relationship cost	Disputes resolved without getting damage to their relationship.

The adjudicator took nearly 270 days to give their decision. Table 7.28 displays each amount of direct cost submitted by the parties.

Table 7.28 displays the preliminary analysis of the adjudication in case study 5 against theoretical attributes.

Table 7.28 reveals the performance of the said adjudication according to the laid down attributes of ADR. The neutral party presented as the adjudicator possesses relevant knowledge in construction and manages to consider and resolve multiple disputes in adjudication. Since, the adjudication decision was accepted by both parties the adjudicator was able to manage the process effectively.

The total cost for adjudication was about one tenth of the claim amount. But it has taken 96 days to complete and give the decision. There were no penalties enforced and both parties bear the cost for adjudication equally.

The adjudication process was arranged in way that disputing parties cannot appeal but can refer unresolved disputes to the next level of ADR. In this case study 5, the next level is arbitration. However, both parties followed the adjudication decision; arbitration was not considered in this case study.

Table 7 - 28 Case 5 - Adjudication attributes

Mid-Level Themes	Low- Level Themes	Behavior of Case 5 - Adjudication
Neutral Third Party	Effective case management of the neutral	Document show that the adjudicator has indicated the importance of resolving disputes through adjudication and clearly explained the process.
	Impartiality of the neutral	No evidence on this.
	Knowledge in construction	40 years of construction industry experience, chartered quantity Surveyor, 10 years of experience in construction ADR.
	Power to compel consolidation	Not applicable.
Benefits	Addressing power imbalance	Specifically, this cannot identify.
	Cost	Cost for adjudication is nearly the claim amount.
	Ease of implementation	If both parties agree only.
	Improvement of communication between parties	Communication was there to explain their own point of view on referred disputes.
	Penalty	No penalty was given. Adjudicator's cost was beard equally by both the parties.
	Preservation of business relationships	No evidence on this
	Time for Completion	96 days.
Process	Ability of the parties to appeal	Cannot appeal but can reject by giving the notice of dissatisfaction and go for the next step of ADR.
	Confidentiality of the process	Confidential.

	Control by parties	Parties appointed the adjudicator. However, after the appointment adjudicator decided on the process and it was controlled by the adjudicator.
	Flexibility of the proceeding	Several extensions were given for document submissions.
	Formality	Adjudicator was performed as explained in the contract agreement.
	Privacy of the proceeding	Private.
	Range of Disputes	Disputes under different categories were referred.
	Voluntariness	Adjudicator was not a voluntary process. It is accordance with the dispute resolution clause in the contract agreement.
Settlement	Binding decision/settlement	Not a binding decision.
	Consensus of the parties for settlement	Parties agreed to follow.
	Fairness	No complain on this.
	Possibility for Creative Settlement	Can assume since the award was accepted by both parties.
	Scope of remedy to satisfy interest	Settlement was based on the evidence.

7.7 Cross case Analysis

The five case studies presented are public sector construction projects. The Table 7.29 displays a summary of disputes in all five case studies. The major disputes in all five case studies were categorized under “owner related causes of disputes” and “contractor related disputes”. Suspensions of work and major defects in maintenance are two root causes which create more disputes in case studies 1 and 2. Further, payment delays have caused disputes in four out of five case studies.

Table 7 - 29 Summary of disputes in all five case studies.

Dispute category	Dispute cause	No of disputes					Total no. of disputes
		Case 1	Case 2	Case 3	Case 4	Case 5	
Owner related	Payment delays	1		1	2	1	5
	variations initiated by the owner	1					1
	Non-payment of changes	4					4
	Suspension of work		5		2	1	8
	Late giving possession				1		1
	Change of scope				1		1
Contractor related	Major defects in maintenance	4					4
	Inappropriate claim	1	1				2
	Delay in work progress				1	1	2
	Time extension			1			1
Human behaviour related	unfair behaviour	3	2			3	8
	Lack of team spirit	1					1
	Lack of team spirit	1					1
External factors related	Legal and economic factors	1		1			2
Design related	Availability of information	1			1		2

Table 7.30 illustrates a summary of five case studies. The table explains that when the disputes are escalated to the different levels of dispute resolution the number of disputes will increase. Further, it can be seen that building renovation projects create more disputes than the other types of constructions. The human behaviour, contractor and contract related disputes are the major root causes of disputes in those case studies.

Table 7 - 30 Summary of five case studies.

Case	Client	Contractor	Type of project	No. of Disputes	Root cause for disputes		Mediation	Adjudication	Arbitration
					Category	Cause			
1	Public sector	CIDA registered	Building renovation	Mediation-3 Adjudication – 10 Arbitration – 17	Design related	availability of information, inadequate/incomplete specification	Both parties agreed but failed due to unenforceability	One party disagreed	Agreed and enforced in courts.
					Contractor related	Quality of work			
					Human behavior related	Lack of team spirit			
2	Public sector	CIDA registered	Construction of hostel building	Adjudication – 8 Arbitration – 9	Contractor related	Delays in work progress	Not applicable	One party disagreed	Agreed and enforced in courts.
3	Public sector	CIDA registered	941 housing units	DAB – 3	Contract related	Risk allocation	Not applicable	Agreed with DAB decision and enforced	Not applicable
					External factors related	Weather			
4	Public sector	CIDA registered	Two story building for	Adjudication – 8	Project related	Site condition	Not applicable	Agreed with adjudicator's decision	Not applicable
					Contract related	Inadequate bid information			

Case	Client	Contractor	Type of project	No. of Disputes	Root cause for disputes		Mediation	Adjudication	Arbitration
					Category	Cause			
			MRI scanner unit		Human behavior related	Unfair behavior		and enforced	
5	Public sector	CIDA registered	Waste water treatment plant	Adjudication – 6	Owner related	Owner furnished material and plant	Not applicable	Agreed with adjudicator's decision and enforced	Not applicable
					Human behaviour related	Unfair behaviour			

The findings further reveal that the mediation practice in Sri Lanka is a speedy, cost effective, voluntary ADR method which shows more positivity towards the theoretical attributes. The only negative point in mediation is the difficulty in enforcement of mediation outcomes without the parties' consent.

Another major finding is that the adjudication and arbitration practices in the Sri Lankan construction industry are costly and time consuming. Both the disputing parties having to spend more time on document preparation and witness hearings in adjudication/arbitration are the major reasons for time to exceed in both processes. This reveals that parties in the construction industry have a lack of document preparation and communication. In chapter 5 it was found that lack of document communication is one of the major reasons for the disputes in the Sri Lankan construction industry, where it has affected the ADR practices as well.

Also, it can be seen that disputing parties are referring disputes to all the available dispute resolution methods even though the decisions are the same. The government projects are commenced from the peoples' tax money. However, from the case studies it can be seen that parties are not referring their disputes to ADR with proper prearrangements from their side. Therefore, it can be seen that money spent on public construction projects is wasted due to the malpractices in ADR.

Since the neutral third party was appointed after the dispute arises, starting with ADR has taken a considerable time. According to case study 2 disputing parties have failed to come to an agreement on an adjudicator for nearly three years and finally, CIDA appointed a suitable adjudicator.

Neutral third parties of the presented cases were considered as positive towards the listed attributes. However, according to the current practices in Sri Lanka, power to compel consolidation is not applicable in ADR. Further, from case study 2 it was revealed that the neutral third parties with more experience in ADR provide better solutions.

The benefits of the ADR presented in the case studies showed that cost and time taken for adjudication and arbitration is higher than voluntary mediation. Further, it revealed from case study 2 that less complex but interrelated disputes take less time in resolution. It was further proven from case study 3 that DAB has divided the referred disputes to provide more attention on resolution and less complexity. The voluntary methods mediation outcome and contractual adjudication decisions are less enforceable.

7.8 Summary

The presented case studies revealed that a dispute can escalate to several other disputes in the Sri Lankan construction industry. Further, when disputes are not resolved properly the number of disputes will increase with time and the cost for the dispute resolution will also increase.

Even though parties refer disputes to voluntary dispute resolution methods, because of the unenforceability, the successes of those dispute resolution methods are fewer. Therefore, parties to the dispute much prefer to refer their disputes to the resolution methods mentioned in the contract agreement rather than voluntary resolution methods. That shows parties are willing to follow the dispute resolution clause in the contract agreement.

The adjudication and arbitration practice in the Sri Lankan construction industry are costly and time consuming. One of the major reasons for more time being spent on adjudication and arbitration is the time taken for document preparation by the disputing parties. Since, the public sector contracts prepare the contract document following SBD from CIDA adjudication and arbitration are compulsory dispute resolution methods in those contracts where voluntary methods do not commonly appear. Therefore, once a dispute arises it is common to see that parties to the disputes refer their disputes to those two ADR methods.

The case studies show that the neutral third party in ADR has sufficient experience and knowledge to resolve disputes in the construction industry. However, if the parties to the dispute do not have confidence in the neutral third party's impartiality the final decision will not be effective. Therefore, it is important for the neutral third party to win the trust of the disputing parties to complete a successful ADR.

Finally, it can be confirmed that the adjudication and arbitration practices in the Sri Lankan construction industry are costly and time consuming.

CHAPTER 8

8.0 Results 4 – Questionnaire Survey Data Analysis

8.1 Introduction

This chapter presents the findings and the analysis of the questionnaire survey undertaken to establish the specific aspects of the Sri Lankan construction industry which related to the successful implementation of adjudication and arbitration. The case study results highlighted the extensive cost and times spend for both the ADR methods. It further displayed the barriers in implementing adjudication decisions and the parties' distrust towards the neutral third party.

Therefore, this chapter will establish the dependent and independent variables of the issues identified in chapter 7 in relation to the adjudication and arbitration practice in the Sri Lankan construction industry. Additionally, in developing the framework solutions and mitigatory measures for the issues in the practical application of adjudication and arbitration practice also will be discussed here.

8.2 Analysis Procedure

Data was collected through the Bristol online survey platform and delivered as an SPSS document. Data was analysed using non-parametric analysis using SPSS with the guidance given in Field (2018).

Since the data collection was conducted mainly as two groups the Mann-Whitney U test was used in data analysis. Through the Mann-Whitney U test, the differences in the means of two independent samples were compared. The Mann-Whitney U test is for nominal or ordinal independent variables with metric or ordinal dependent variables.

8.3 Sample Description

The sample response rate and the demographic data of the sample are presented in this section.

8.3.1 Response Rate

The focus of the survey is to enrich the data collected through the qualitative approach. Even though the convenient sampling method was adopted the participants were selected based on their experience and the knowledge on the construction disputes and dispute resolution methods. All the participants were filtered using the initial question in the survey questionnaire. The total returned sample of 83 included from Group 1, 35 and Group 2, 48.

8.3.2 Demographical data

Since the sample was divided into two groups (strata) Figure 8.1 displays the number of respondents in each group. Group 1 which represents adjudicator/arbitrator was 35 and Group 2 other industry professionals 48.

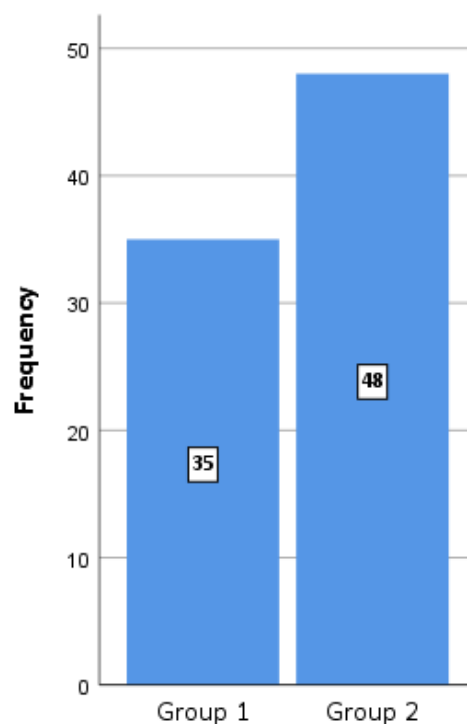


Figure 8 - 1 Number of Respondents in each Group

Figure 8.2 shows that the majority of the respondents are adjudicators and quantity surveyors and the minority are architects. Since, only one architect has responded, architect is made a minority in the respondents' list. 7% 'other' in the pie chart represents, commercial lawyers, CEO of the National Arbitration Centre of Sri Lanka, and Staff officer

contract administration in ICLP arbitration centre in Sri Lanka. Figure 8.3 displays the type of organisation which those respondents work in. The majority of the respondents work in the building construction sector and the minority is in several other sectors. The other sectors included military construction and the legal sector.

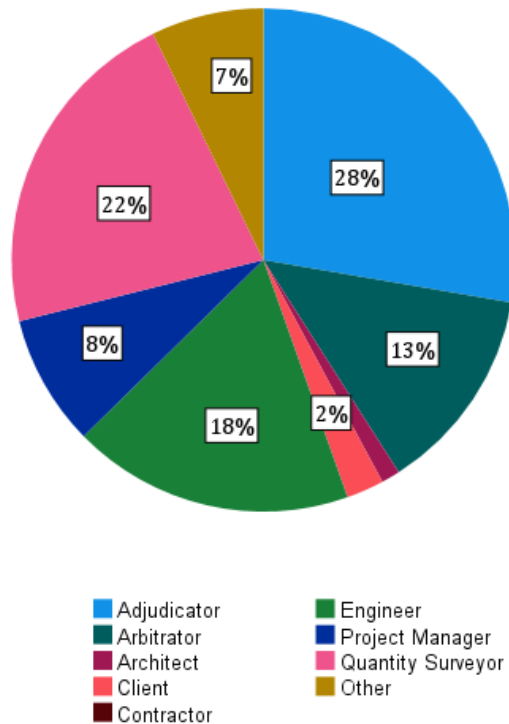


Figure 8 - 2 Respondents Role in the Construction Industry

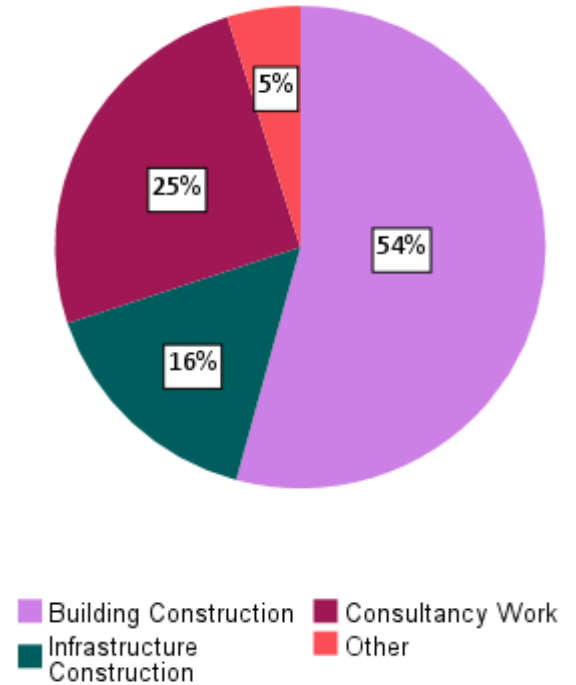


Figure 8 - 3 Respondents' Types of Organisation

Due to the nature of the study, a question was included to limit the survey to the participants who only have experience in ADR practice in Sri Lanka. The participants who said “no” to the experience in dispute resolution were directed to the survey exit, the last page of the survey.

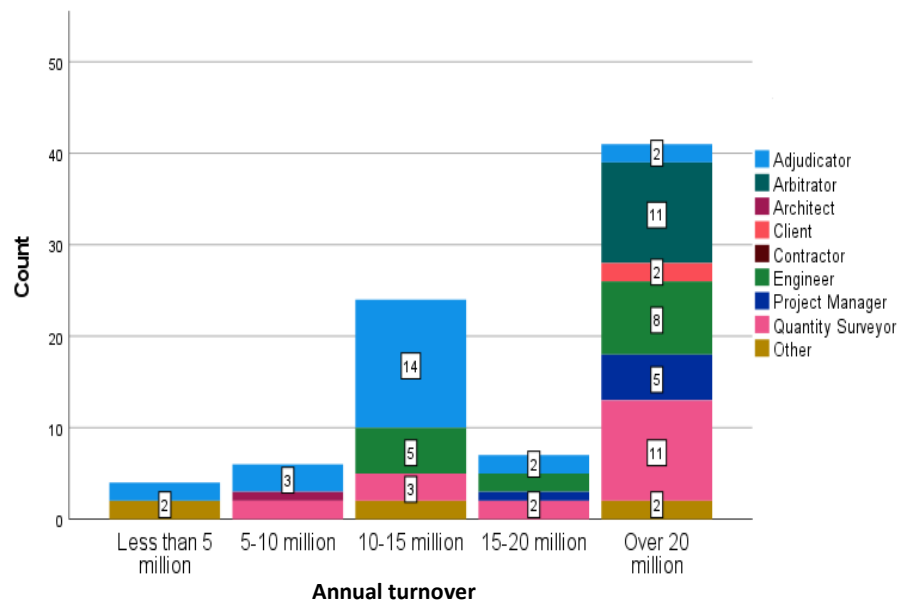


Figure 8 - 4 Respondents' Average Annual Turnover of Past 03 Years

Figure 8.4 displays the average annual turnover for the past 3 years of respondents' companies. The figure reflects that the majority of the responders are working in major construction companies which have produced over 20 million rupees of average annual turnover during the past 3 years. The figure further reveals that the maximum number of adjudicators is in the range of 10-15 million rupees and the maximum number of arbitrators in the category of over 20 million rupees.

Experience of respondents in the dispute resolution process is displayed in Figure 8.5. Nearly one-third of professionals have 11-15 years of experience in the dispute resolution process. Some of them have both local and international experience in the dispute resolution process. A minority of respondents have more than 20 years of experience in the same. Since the research is about ADR methods the experience counted here is based on the ADR practices. Therefore, all the respondents have experience in ADR practices.

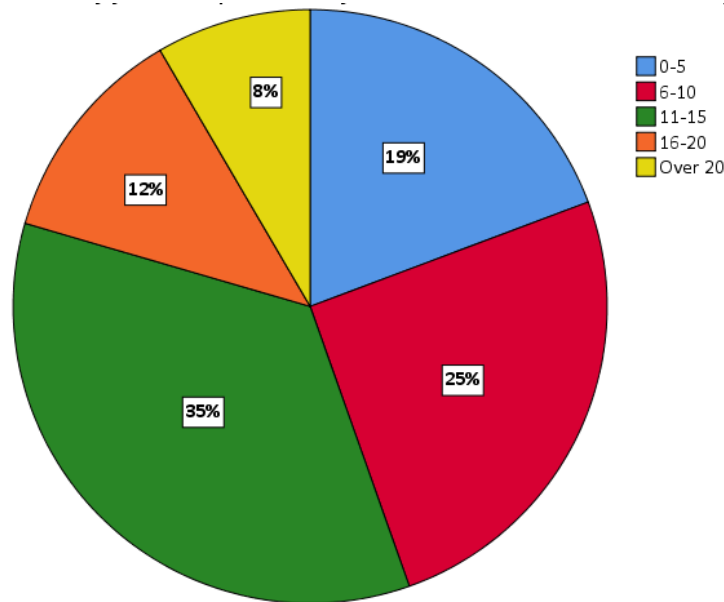


Figure 8 - 5 Respondents' Experience in Dispute Resolution Process

8.4 Adjudication

The first set of analyses examined the adjudication practice in the Sri Lankan construction industry. The survey question presented them with options to illustrate the reasons to refer disputes for adjudication as a dispute resolution method in the Sri Lankan construction industry. The most common reason was given 6 points and the least common was 1.

Table 8 - 1 Reasons to refer Disputes to Adjudication - Checking the Significance

	Less knowledge in contract agreement	Engineer is not exercising the authority given	Engineer is not seen as fair and neutral by the contractor	Follow the dispute resolution clause in the contract agreement	Audit Queries	Any other
Mann-Whitney U	485.000	579.000	599.000	583.500	549.000	593.500
Wilcoxon W	1661.000	1755.000	1775.000	1213.500	1179.000	1223.500
Z	-3.359	-2.492	-2.303	-2.470	-2.837	-2.768
Asymp. Sig. (2-tailed)	.001	.013	.021	.014	.005	.006

The displayed p value in Table 8.1 is less than 0.05 and it is statistically significant. Therefore, failed to reject the null hypothesis, where there is a difference within the groups for each reason displayed in the question.

Table 8 - 2 Mean - reasons for disputes to be referred to adjudication

Group		Less knowledge in contract agreement	Engineer is not exercising the authority given	Engineer is not seen as fair and neutral by the contractor	Follow the dispute resolution clause in the contract agreement	Audit Queries	Any other
Group 1	N	35	35	35	35	35	35
	Mean	5.00	4.49	4.60	3.09	2.40	1.43
Group 2	N	48	48	48	48	48	48
	Mean	3.79	3.67	3.96	4.04	3.29	2.25
Total	N	83	83	83	83	83	83
	Mean	4.30	4.01	4.23	3.64	2.92	1.90

Table 8.2 illustrates the mean obtained by each group for the given reasons for disputes to be referred to adjudication. Group 1 with a mean of 5 believes that “less knowledge in the contract agreement” is the major reason for disputes to be referred while obtaining a mean 1.43 “any other” is the minor reason. Group 2 claimed “follow the dispute clause in the contract agreement” as the major reason for disputes to be referred to adjudication while “any other” reasons became the lowest. The overall mean is like the mean of Group 1.

The participants’ replies under “any other” are listed below.

Group 1: employer’s attitude towards the contractor’s rights and treating the contractors as a second-class citizen.

Group 2 : parties adversarial culture, government policies, issues in communication, not being able to negotiate on the cost and time claims, errors in the contract document, clients' and engineer’s personal opinions without following the contract. Employer’s unethical involvement during the contract administration on decision making.

However, many agreed that adjudication is a rapid process compared to other dispute resolution methods. Therefore, parties refer disputes to adjudication to get their disputes resolved within less time and at lower cost.

Figure 8.6 histogram illustrates the number of disputes in which respondents prefer to be in adjudication referral. The majority of both the groups prefer less than 5 disputes in an adjudication referral. Interestingly out of the 83 respondents’ no one preferred 16-20

disputes to be in one adjudication referral. The least preferred number displayed as 6-10 and more than 20 disputes to be in one adjudication referral.

Group 1 who prefers to have less than 5 disputes stated following reasons for the choice.

- The time given in the contract document is mostly suitable for fewer disputes.
- The decision for disputes can be given within less time.
- Dispute analysis, document preparation, and preparation of awards are less complex and less time-consuming.
- Complex disputes can be resolved with a detailed investigation.
- Among the referred disputes an adjudicator might be good in resolving several disputes. Therefore, parties might not get a suitable decision for the disputes which are not the expert area of the adjudicator. However, parties can appoint a dispute adjudication board in such instances. But it is a costly process.
- Reduce the confusion between disputes.
- More focus can be given to all the referral disputes.
- The allocated time to resolve disputes in the contract agreement is for one dispute. Unless the disputes are interrelated it would be preferred to go with fewer of disputes.

Considering the cost and ease of getting a quick solution, the quantity surveyors preferred fewer disputes to be in an adjudication referral. They further explained that the major factor in favour of using ADR for construction disputes is to minimize the time consumed. Therefore, there is less time and less risk for the adjudicator, and they can come to their determinations within this limited time.

In group 2 the majority of engineers preferred 11-15 disputes in an adjudication referral. Engineers explained that the number will depend on the nature of disputes. If the disputes are interrelated numbers should be ignored and all should be taken to one referral and resolved. Added to that, adjudicators explained that an adjudicator must identify the potential disputes arising out of any referred disputes and ensure to address all of them. Further those commercial lawyers who participated in this survey explained disputes cannot be limited and it is natural to have more than 5 disputes in one adjudication referral.

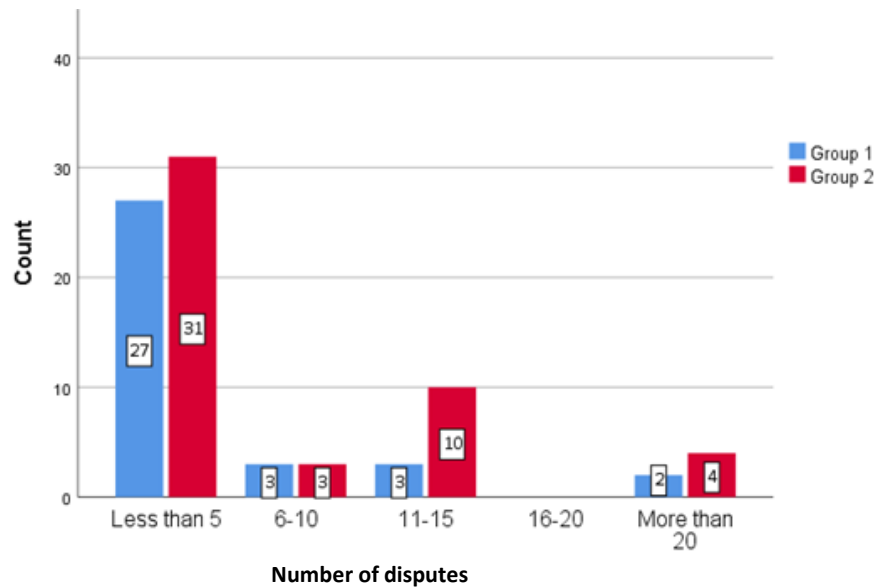


Figure 8 - 6 Number of Disputes preferred to be in One Adjudication referral

Considering all the above, the majority preferred to have fewer disputes in one adjudication referral. The majority belongs to adjudicators, arbitrators, and quantity surveyors. The main reason explained was to obtain solutions for disputes within a shorter time. They further emphasized that the reason to have ADR is to minimize the cost and time since the construction project should continue without getting delayed due to disputes. However, engineers explained it is important to refer all the interrelated disputes to one adjudication referral without considering the dispute count.

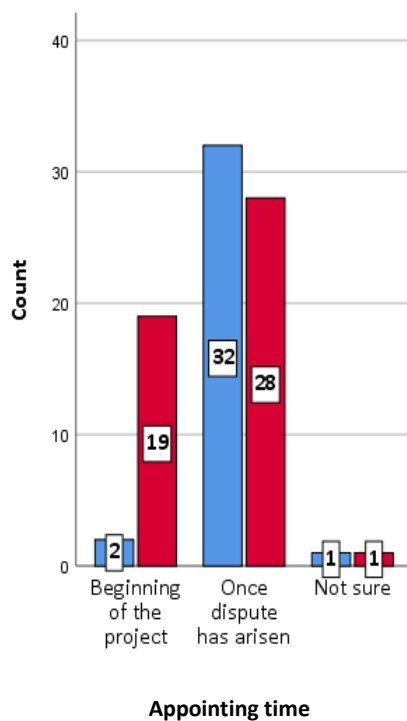


Figure 8 - 8 Adjudicator Appointing time - In Practice

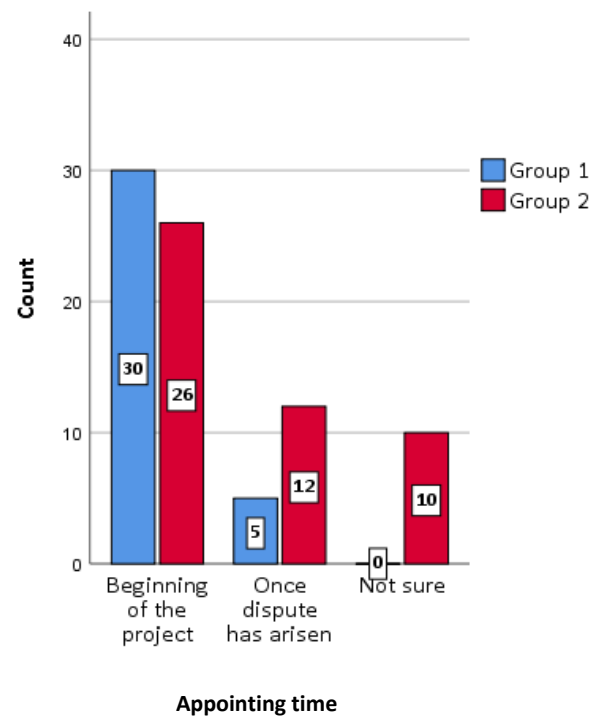


Figure 8 - 7 Adjudicator Appointing time - Suggestions

Above Figures 8.7 and 8.8 display the results obtained on the current practice of appointing adjudicators and the preferred time of appointing adjudicators respectively. According to Figure 8.7 both Group 1 and Group 2 agree that majority of the adjudicator appointments happen after a dispute matter arises. But because of several other reasons a considerable number of Group 2 participants believe that an adjudicator should be appointed at the beginning of the project. Only a few participants from Group 1 and 2 are not sure about the general practice.

Figure 8.8 displays the preferences for appointing the adjudicator by Group 1 and 2. The majority of both the groups suggested appointing an adjudicator at the beginning of the project. For the preferences given for 'appointing adjudicator once dispute arises' Group 2 is higher than Group 1. Even though few of the Group 2 participants are not sure on the best time to appoint an adjudicator, all the Group 1 participants clearly chose either to appoint in the beginning or by the time the dispute arises in the construction project.

With that note, the next question was presented to the participants to inquire about the reasons for not appointing adjudicators at the beginning of the project. Several answer

options were presented, and participants were asked to put their ratings. There, the parties' financial issues were identified as the most common reason and the least common was the unavailability of the professionals to appoint as adjudicators.

Table 8 - 3 Reasons for not appointing adjudicator at the beginning of the project – Checking the significance

	Parties financial issues	Unavailability of professionals	Any other
Mann-Whitney U	685.500	736.500	794.000
Wilcoxon W	1861.500	1366.500	1424.000
Z	-1.670	-1.062	-.451
Asymp. Sig. (2-tailed)	.095	.288	.652

This displayed p value in Table 8.3 is more than 0.05 and it is not statistically significant. Therefore, the null hypothesis is rejected, where there is no significant difference between the groups for each reason presented in the question.

Table 8 - 4 Reasons for not appointing adjudicator at the beginning of the project

Which of the following describe your role		Parties financial issues	Unavailability of professionals	Any other
Group 1	N	35	35	35
	Mean	2.63	1.51	1.86
Group 2	N	48	48	48
	Mean	2.35	1.71	1.94
Total	N	83	83	83
	Mean	2.47	1.63	1.90

Table 8.4 illustrates the mean obtained by each group for the reasons given for not appointing an adjudicator at the beginning of the project. Group 1 and 2 with a mean of 2.65 and 2.35 respectively believe the parties' financial issues is the reason for not appointing an adjudicator at the beginning of the project. However, both groups claimed that professionals are available if the parties have enough financial capability to finance the adjudication.

Under any other Group 1 and 2 suggested following reasons for not appointing adjudicator at the beginning of the project.

Group 1: 1. Although contractual provisions are there when it comes to implementation between the employer and contractor, both consider it as an unnecessary thing to appoint an adjudicator at the beginning of the project. There are enough professionals for dispute adjudication. However, it is very difficult to find an adjudicator who has both contractual and technical knowledge. They further explained unawareness of the procedure involved, parties' attitude, and not seeing any significant advantage are several other reasons not to appoint an adjudicator at the beginning of the project.

Group 2: Parties do not expect any issues at the beginning of the project. Also, parties do not foresee any dispute in the future and their poor knowledge of the dispute resolution process does not support them to appoint an adjudicator at the beginning of the project.

Table 8 - 5 Adjudicator's qualification

Which of the following describe your role		Technical level qualifications	Under graduate degree qualifications	Post graduate degree qualifications	Industry qualifications (Chartered)	Any other
Group 1	N	35	2	30	32	4
	Mean	.09	1.00	1.00	1.00	1.00
Group 2	N	48	5	28	39	11
	Mean	.33	1.00	1.00	1.00	1.00
Total	N	83	7	58	71	15
	Mean	.23	1.00	1.00	1.00	1.00

Table 8.5 presents the qualifications expected, to be an adjudicator. It is apparent from the table that an adjudicator should have a degree, postgraduate degree and, industry qualification. However, either group is not satisfied with just technical qualifications. Those Sri Lankan adjudicators are also expected to have a few other qualifications which are relevant to dispute resolution practice. Survey participants were allowed to come up with that qualification in the circulated questionnaire. Out of all participants, Group 1 emphasized that the professional who already practises adjudication should possess experience in contract documents and interpretations, experience in the practical application of contract principles, and technical knowledge with consultancy and project management skills. Group 2 explained that, apart from the academic qualification, an adjudicator should have a legal background with contract management skills. Also claimed

about the knowledge in ADR mechanism where quantity surveyors claim for good attitude and respectable citizen to be an adjudicator. Generally, everyone agreed on institutional registrations to become an adjudicator. This further reveal that the lowest qualification, an undergraduate degree, is more important than a technical level qualification.

Table 8 - 6 Time intervals suggested for Adjudication procedure

Procedural steps	Group 1		Group 2		Total	
	N	Mean	N	Mean	N	Mean
Setting up the preliminary meeting	35	9.57	48	7.06	83	8.12
Preparation and submission of claim	35	8.34	48	12.63	83	10.82
Preparation and submission of response	35	9.40	48	13.23	83	11.61
Preparation and submission of reply by the claimant	35	10.20	48	9.85	83	10.00
Hearings	35	15.43	48	9.38	83	11.93
Preparation of meeting minutes	35	4.69	48	5.98	83	5.43
Final statement by the claimant	35	5.80	48	8.88	83	7.58
Final statement by the respondent	35	7.80	48	9.06	83	8.53
Preparation and submission of Adjudicator's decision	35	12.89	48	14.06	83	13.57
		84.11		90.13		87.59

During the previous qualitative data analysis, it was revealed that the time taken for the adjudication process is considerably high. Therefore, in the questionnaire survey, participants were presented with the activities in the adjudication process and asked to enter the time required for each activity in days. Table 8.6 displays the time suggested by Group 1 and 2 for each step in the adjudication process. Based on the mean value the total time suggested by Group 1 and 2 are respectively 84 and 90 days (to the last decimal point). There are major differences between the parties; Group 2 suggest more time for document preparation where Group 1 suggest spending more time on witness hearings. However, as per the SBD document the adjudication should be complete within 28 days, whereas both Group 1 and 2 suggested spending much more time. But according to the FIDIC international contract adjudication should be completed within 84 days. With that study

can suggest that adjudication process will take 84 days to give away the adjudicator's decision.

8.4.1 Statutory adjudication

Several adjudicators preferred to have statutory adjudication to formalize and give legal status for the adjudicators' decisions. Several other arbitrators, quantity surveyors, and engineers believe if there is a statutory adjudication the process will be more efficient, it will be easy to enforce the adjudicators' decision, and ultimately will be beneficial to the construction industry. Arbitrators further explained most of the contracts get delayed due to disputes. Therefore, solving disputes while the work is in progress will be very advantageous to the performance of the project. This can be achieved through statutory adjudication. Quantity surveyors claimed once the statutory adjudication is complete, their parties will get a chance to stop the continuation of dispute resolution.

The respondents who are not agreeing to have statutory adjudication in Sri Lanka explained that adjudication is done by an expert. Further, it was set to complete the process and give the decision in a short time with fewer hearings. If the adjudication, is made statutory it will be a binding decision where it might affect the accuracy of the decision. It is necessary to have an act for adjudication to get legal powers. Having an act might badly affect the adjudication process and it will lose the purpose of adjudication. Since Sri Lanka has a proper adjudication process, the parties should understand it properly and use it to the maximum. Some of the adjudications were conducted in Sinhalese for the convenience of both parties. Therefore, making it statutory might badly affect minor contractors.

Few respondents are having mixed feelings on statutory adjudication. Because of the situation in the Sri Lankan construction industry, they agreed to have statutory adjudication. They further explained that construction professionals do not try to understand the ADR processes and use them for the benefit of the overall project. At the same time if the adjudication becomes a statutory process it will come up with various other issues such as reducing the flexibility of the process, losing the capacity to be innovative within the process, and it might badly impact the environment of the construction industry. However, a respondent suggests having a dispute avoidance adjudication board (DAAB) rather than going for statutory adjunction as per the FIDIC 2017. It should be appointed at the beginning of the contract where it will take care of all the

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disputes and the reasons why the disputes occur, without them becoming escalated to be referred to ADR.

Table 8 - 7 Acceptability of adjudication decision

	Adjudication decisions acceptability
Mann-Whitney U	790.000
Wilcoxon W	1420.000
Z	-.495
Asymp. Sig. (2-tailed)	.621

Table 8.7 illustrates the outcome of the Mann-Whitney test on the acceptability of the adjudication decision. The p value of the test outcome is 0.621 which is greater than 0.05. Therefore, the null hypothesis cannot be rejected for equal mean values.

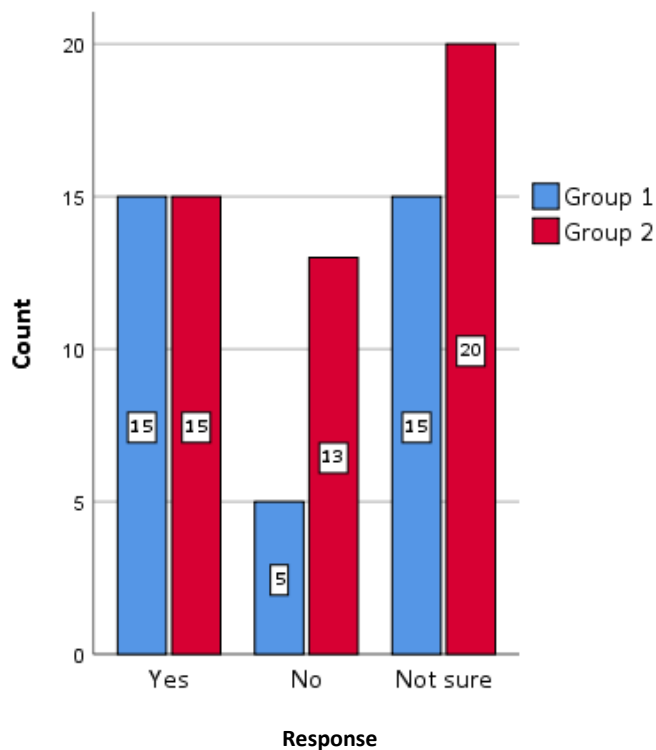


Figure 8 - 9 Acceptability of adjudication decision by several parties

As per Figure 8.9, 65% of the participants either do not believe in the acceptability of the adjudication decision or are not sure on the acceptability. These outcomes discourage people from following adjudication as a dispute resolution method.

The next section of the survey was concerned to find out the reason for the results in figure 8.9.

Table 8 - 8 Reasons for adjudication decision to be rejected – Checking the significance

	Unfair decision	Parties attitude	No trust towards the process	Any other
Mann-Whitney U	552.500	606.500	815.500	766.500
Wilcoxon W	1182.500	1782.500	1991.500	1942.500
Z	-2.761	-2.299	-.241	-.757
Asymp. Sig. (2-tailed)	.006	.022	.809	.449

The displayed p value in "able 8.7 are different in every situation. Unfair decision and parties' attitude is less than 0.05. The other two options received more than 0.5. Therefore, the null hypothesis cannot be rejected and there is a significant difference between "no trusts towards the adjudication process" and "any other" between the means of both groups.

Table 8 - 9 Reasons for adjudication decision to be rejected

Which of the following describe your role		Unfair decision	Parties attitude	No trust towards the process	Any other
Group 1	N	35	35	35	35
	Mean	1.80	3.40	2.77	2.03
Group 2	N	48	48	48	48
	Mean	2.50	2.96	2.71	1.83
Total	N	83	83	83	83
	Mean	2.20	3.14	2.73	1.92

Table 8.9 displays the mean values of each reason given by both groups on rejecting the adjudication decision. Group 1 with a maximum mean value commented 'parties' attitude' as the major reason for the adjudication decision to be rejected. On the other hand, Group 2 also accepted it with a maximum score of 2.96. However, scores of "parties' attitude" and

'no trust towards the process of Group 2 is very much closer to each other. Therefore, it can confirm both the reasons similarly affect the acceptability of an adjudication decision.

The majority of the participants explained accepting or rejecting the adjudicator's decision depends on the disputing parties. If the dispute is not a very significant matter, the adjudication decision can be accepted and go ahead. But in another case, if they feel there are complexities involved, even if the parties do not see a reason to reject it they might still want to take it further and refer to the next level of ADR. The participants who believe that the adjudication decision is likely to be rejected came up with the following reasons;

- Poor knowledge of adjudication procedure and no willingness to accept issues pointed out by the adjudicator.
- The adjudicator failed to keep the trust of the disputing parties.
- Losing important points when resolving disputes within minimum time.
- The failing party always tries to get a favourable decision by going for the next dispute resolution method.
- There is no enforcement method for the adjudicator's decision unless parties agree on it.
- Availability of the arbitration provision.

Turning now to the cost components of the adjudication process, participants agreed on the following cost components which were presented during the survey.

- Adjudicator's fee
- Claim consultant fee
- Legal counsellor fee
- Venue fee (place, stenography, documentation, postal)
- Opportunity cost (losing future projects)
- Relationship cost (Business relationship)
- Time
- Experts Fee

Participants were allowed to come up with any other costs. However, no other costs except the cost components were presented in the survey.

8.5 Arbitration

The next section of the survey was concerned with the arbitration. First, the analysis was conducted to know the reasons to refer disputes to arbitration. The reasons to reject arbitration award by the parties were collected through the literature review and primary data collected so far. Those reasons have included in the survey questions.

Table 8 - 10 Reasons to refer disputes to Arbitration - checking the significance

	Disagreeing with Adjudicator's decision	Less knowledge in contract agreement	Engineer is not exercising the authority given	Engineer is not seen as fair and neutral by the contractor	Follow the dispute resolution clause in the contract agreement	Audit Queries	Any other
Mann-Whitney U	605.000	567.500	530.500	823.500	660.000	589.000	592.000
Wilcoxon W	1781.000	1743.500	1706.500	1453.500	1290.000	1219.000	1222.000
Z	-2.606	-2.574	-2.947	-.155	-1.760	-2.441	-2.751
Asymp. Sig. (2-tailed)	.009	.010	.003	.877	.078	.015	.006

The displayed p value in Table 8.10 is a mixture of less and greater than 0.05. The Engineer is not seen as fair and neutral by the contractor and following the dispute resolution clause in the contract agreement has a greater p value than 0.05. Therefore, both are not statistically significant. Therefore, the null hypothesis is valid. In that sense, there is no difference within the groups for those reasons. But all other reasons p value is greater than 0.05. Therefore, there is a difference within the groups for those reasons.

Table 8 - 11 Mean - Reasons for disputes to refer to arbitration

Which of the following describe your role		Disagreeing with Adjudicator's decision	Less knowledge in contract agreement	Engineer is not exercising the authority given	Engineer is not seen as fair and neutral by the contractor	Follow the dispute resolution clause in the contract agreement	Audit Queries	Any other
Group 1	N	35	35	35	35	35	35	35
	Mean	6.49	4.94	4.54	4.49	3.14	2.71	1.69
Group 2	N	48	48	48	48	48	48	48
	Mean	5.40	4.15	3.63	4.56	3.87	3.63	2.77
Total	N	83	83	83	83	83	83	83
	Mean	5.86	4.48	4.01	4.53	3.57	3.24	2.31

Table 8.11 illustrates the mean values of the reasons to refer disputes to arbitration. There, major reasons identified by both groups disagree with the adjudicator's decision. Then Group 1 in descending order, less knowledge in contract agreement, engineer not exercising the authority given and engineer is not seen as fair and neutral. Group 2 indicated engineer is not seen as fair and neutral by the contractor is the second highest mean score.

Several other reasons given by the participants are as follows;

- Less knowledge in contract obligations
- No proper understanding of the legal status
- A habit of postponing any payments for as long as possible.
- Less confidence in the performance of the adjudicators
- Flexibility and party autonomy in arbitration
- Parties think that the adjudicator's decision does not reflect full justice to the claimant; therefore, the claimant usually seeks arbitration.
- Less knowledge in ADR mechanism
- Poor communication between parties

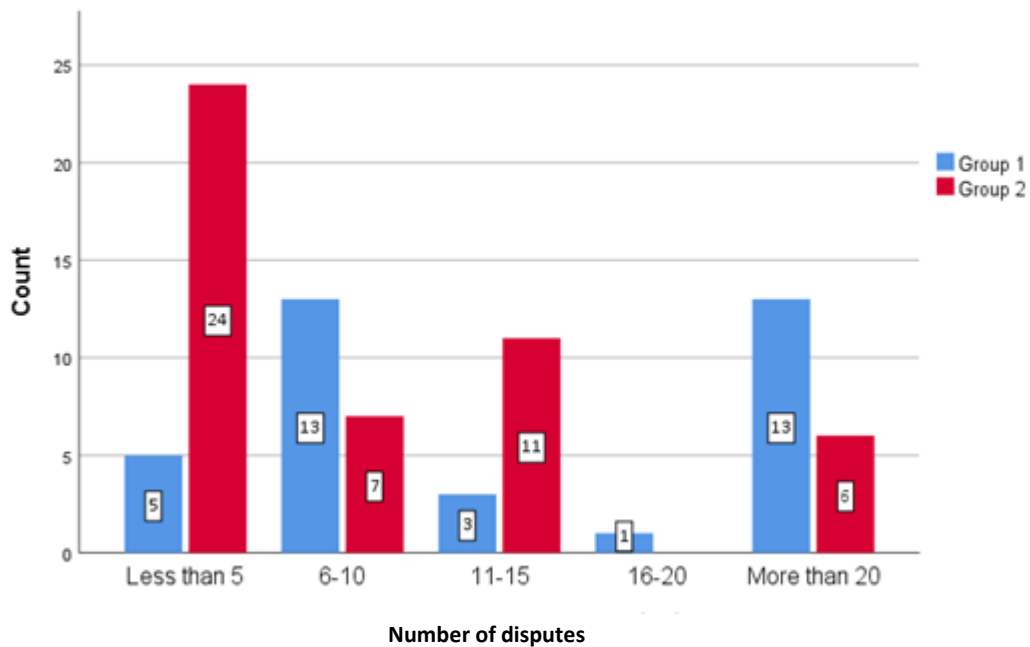


Figure 8 - 10 Number of disputes preferred to be in an Arbitration referral

In Figure 8.10 Group 1 display more interest towards handling more than 20 disputes while Group 2 go for fewer disputes. Only Group 1 agreed to have the number of disputes 16-20. Respondents were allowed to freely comment on their choice as per Figure 8.8.; respondents who preferred to have any number of disputes in an adjudication referral gave different comments.

Group 1: Since allocating arbitrators to resolve disputes in a project is challenging it would be better to resolve all disputes together to keep the project efficient. Further, adjudicators confirmed that dispute numbers should not beconsider in arbitration and any number of disputes referred to arbitration should be considered in resolution. However, if the disputes are interrelated, resolution will be easier rather than going for separate complex disputes. Further, adjudicators commented that disputes referred to arbitration are most likely to come from adjudication. Therefore, all disputes, coming from adjudication need to be resolved here. With that note, if one arbitrator cannot take care of all disputes a panel of arbitrators can be appointed. Arbitrators comment that, since the arbitration act in Sri Lanka has not defined any timeline, considering any number of disputes in arbitration is possible. They further commented that unless the disputes are highly complex, several disputes can be considered in arbitration. However, as mentioned by adjudicators,

arbitrators also believe it is the role of arbitrators to resolve all the possible connected matters in arbitration.

Group 2: Engineers emphasized that the way of handling disputes in arbitration is based on the experience of the arbitrator. Therefore, the referred disputes can be resolved together or with time lapses based on the arbitrators' decision along with the parties' acknowledgment. Project managers claimed that according to the complexity and the project environment, arbitrators and parties will decide on referred disputes, not on the number. However, the majority of the quantity surveyors believe that fewer disputes in an arbitration referral will make the resolution easier. Further, it will help to get the solution within a shorter time rather than going on for years.

Even the majority of the participants agreed to have less than five disputes in an arbitration referral; when the results of the survey were divided into two phases the majority agreed to more than 5 disputes in one arbitration referral. Therefore, as commented above arbitrators have to deal with all the disputes transferring from adjudication or interrelated disputes in arbitration without considering the number. However, it is an important point raised by engineers about the experience of arbitrators who will decide on the arbitration procedure based on the nature and the environment of the project.

The qualifications required for an arbitrator are illustrated in the table below. Group 1 and 2 agreed with the presented arbitrator's qualification in the survey. It is proved through the mean value listed in Table 8.12.

Table 8 - 12 Arbitrator's qualification

Which of the following describe your role		Technical level qualifications	Undergraduate degree qualifications	Post graduate degree qualifications	Industry qualifications (Chartered)	Any other
Group 1	N	3	1	30	30	6
	Mean	1.00	1.00	1.00	1.00	1.00
Group 2	N	16	7	24	40	9
	Mean	1.00	1.00	1.00	1.00	1.00
Total	N	19	8	54	70	15
	Mean	1.00	1.00	1.00	1.00	1.00

The following qualifications were mentioned by the participants under the “any other” qualifications.

- Knowledge in contract law
- Legal qualification
- Experience in dealing with contract documents and knowledge in court procedures
- Knowledge in legal and contractual procedures
- Knowledge in ADR procedures
- Work experience as a contract administrator
- Experience in contract management
- Membership of professional institutions

Table 8 - 13 Time intervals suggested for Arbitration procedure

Procedural Steps	Group 1		Group 2		Total	
	N	Mean	N	Mean	N	Mean
Setting up the preliminary meeting	35	14.91	48	9.61	83	11.85
Preparation and submission of claim	35	17.71	48	16.54	83	17.04
Preparation and submission of response	35	10.31	48	14.98	83	13.01
Preparation and submission of reply by the claimant	35	9.00	48	13.88	83	11.82
Hearings	35	26.57	48	30.67	83	28.94
Preparation of meeting minutes	35	10.09	48	9.83	83	9.94
Final statement by the claimant	35	7.80	48	12.79	83	10.69
Final statement by the respondent	35	10.17	48	13.48	83	12.08
Preparation and submission of Arbitration award	35	11.86	48	15.67	83	14.06
		118.43		137.45		

During the previous chapters in data collection and analysis, it was revealed that the time taken for the arbitration process sometimes extend for years. In that sense, the survey

question was presented with the arbitration activities allowing the participants to enter the time for each activity in days.

Both Group 1 and 2 claimed for more time for witness hearings than the other steps in the procedure. This was similar to adjudication except in the initial claim preparation and submission; Group 2 suggested more time for document preparation. With that the total number of days suggested by Group 2 is 137 which is nearly four and half months. However, Group 1 suggested for 118 days which is closer to four months. However, both groups are considerably similar with the suggested time line for arbitration.

Both time and cost for arbitration are much higher than the other ADR. Therefore, the next set of questions aims to understand the cost components in arbitration. The identified cost components from previous data collections and literature review were presented and the participants were allowed to add any other cost component relevant to the arbitration. The following are the presented cost components.

- Arbitrator's fee
- Claim consultant fee
- Legal counsellor fee
- Venue fee (place, stenography, documentation, postal)
- Opportunity cost (losing future projects)
- Relationship cost (Business relationship)
- Time
- Experts Fee

Following other cost components also mentioned by the survey participants;

- Financial charges such as interest etc. to be paid for the period of the process
- Overheads of the contract parties such as salaries of the staff, electricity, and water
- Salary and wages of the company supporting staff and any other overhead charges such as stationery, electricity
- Secretariat, travelling, and accommodation

Table 8 - 14 Acceptability of the Arbitration award

	Arbitration decision acceptability
Mann-Whitney U	819.500
Wilcoxon W	1995.500
Z	-.210
Asymp. Sig. (2-tailed)	.833

Table 8.14 illustrates the outcome of the Mann-Whitney test on the acceptability of arbitration award. The p value of the best outcome is 0.833, which is greater than 0.05. Therefore, null hypothesis cannot be rejected for equally mean values.

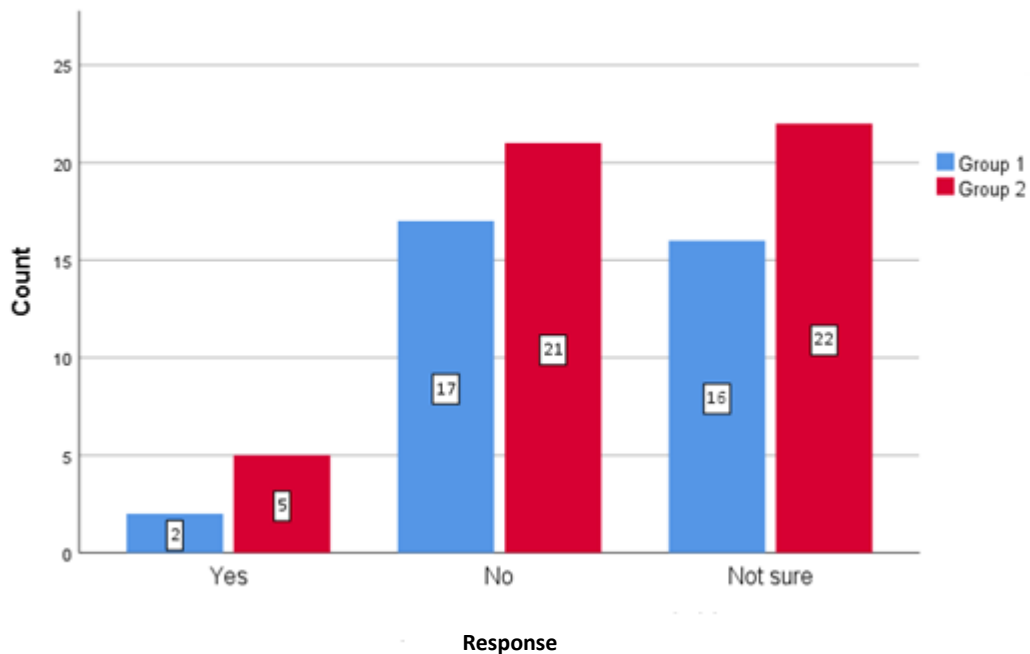


Figure 8 - 11 Acceptability of arbitration decision by several parties

As per Figure 8.11 the acceptability of the arbitration award is displayed. The majority of the Group 1 and 2 answered 'No' and 'Not sure'. It indicates that Sri Lankan construction arbitration awards are highly likely to be rejected.

The next section of the survey aimed to find the reason for the results displayed in graph 8.11.

Table 8 - 15 Reason for Arbitration to be rejected

	Unfair award	Parties attitude	No trust towards the process	Any other
Mann-Whitney U	576.500	333.000	819.000	605.500
Wilcoxon W	1206.500	1509.000	1995.000	1235.500
Z	-2.574	-5.096	-.214	-2.673
Asymp. Sig. (2-tailed)	.010	.000	.830	.008

The displayed p value in table 8.15 has greater value than 0.05 in 'no trust towards the processes'. Therefore, null hypothesis cannot be rejected and there is a significant difference in the same reason between the mean of both groups. Since the arbitration is final and binding, the disagreeing party should go to court to set aside the award.

Table 8 - 16 Reasons for arbitration to be rejected

		Unfair award	Parties attitude	No trust towards the process	Any other
Group 1	N	35	35	35	35
	Mean	2.06	3.74	2.91	1.29
Group 2	N	48	48	48	48
	Mean	2.60	2.71	2.79	1.90
Total	N	83	83	83	83
	Mean	2.37	3.14	2.84	1.64

Table 8.16 displays the mean values of each reason given by both the groups on rejecting the arbitrator's award. While Group 1 believes the major reason for the award rejection is 'parties' attitude' with a mean value of 3.74, Group 2 believes 'no trust towards the process' as the major reason for the rejection with a 2.79 mean.

8.6 Common issues

In the last set of survey questions, participants were asked about the disputes in the construction industry which cannot be resolved either through adjudication or arbitration. The response received to that question is displayed in Figure 8.12. The majority of the participants agreed that no disputes occur on construction sites which cannot be resolved either through adjudication or arbitration. Except for project managers, clients, and architects, the majority in all other professions agreed with the above statement. Since there were participants who believed that there are disputes on construction sites which cannot be resolved through adjudication or arbitration, they were allowed to comment on that on the next question.

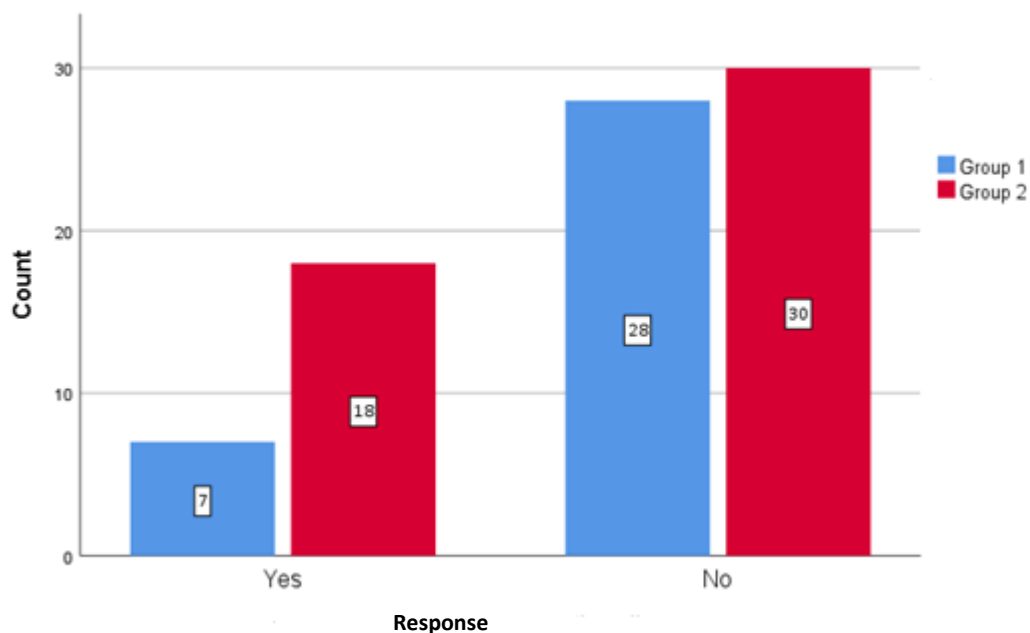


Figure 8- 12 displays the ability for every disputes occurring on construction sites to be resolved through adjudication/arbitration.

Parties who do not understand both the adjudication and arbitration process will not agree to go for those ADRs to resolve their disputes. However, if there are any government policy decisions applicable for the construction projects they will not be able to be resolved either through arbitration or adjudication. Arbitrators and adjudicators claimed that criminal or legal matters of construction projects cannot be resolved through the above two ADR methods.

With that note, any dispute coming out of the contract except government policy decision or legal/criminal matter can be resolved through adjudication or arbitration.

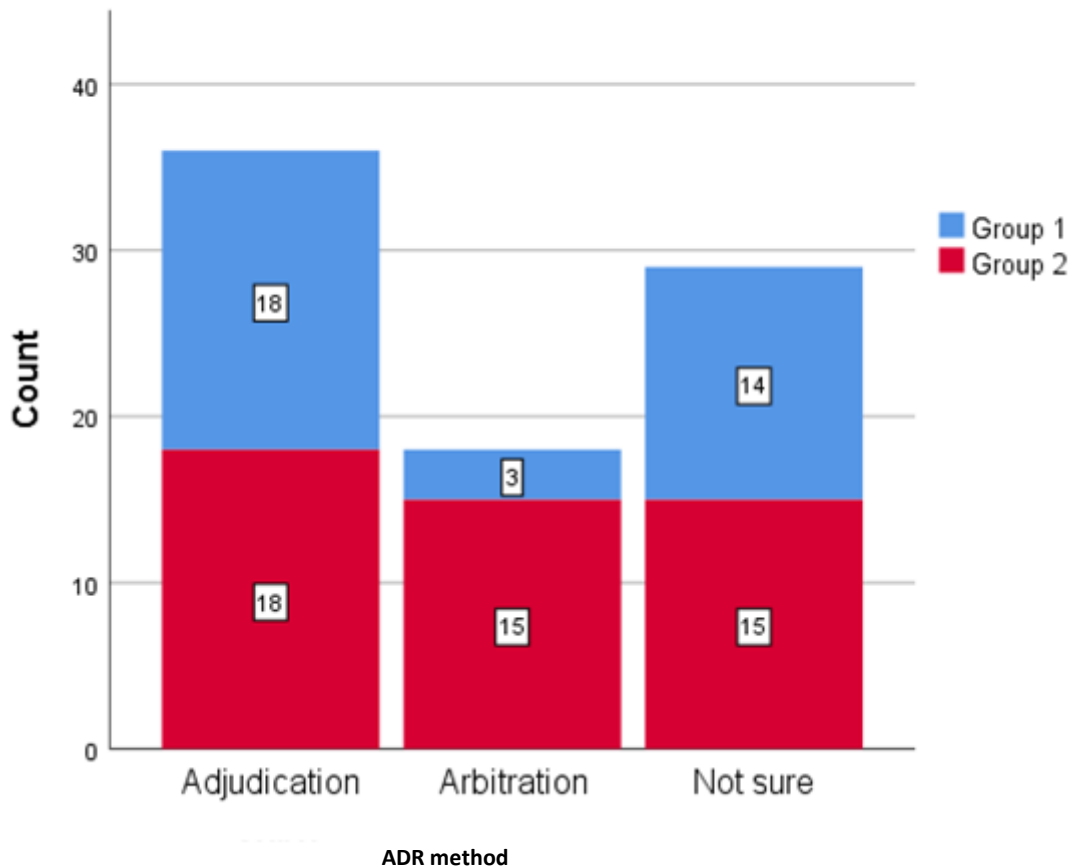


Figure 8 - 12 Best option to resolve dispute in the construction industry

The next set of questions is directed to know the better ADR option in between adjudication and arbitration. The answer to that is displayed in Figure 8.13.

As per Figure 8.13, the best option to resolve construction disputes is adjudication. The majority of adjudicators, legal professionals, and project managers agreed on that. However, quantity surveyors are all happiest with both ADR methods. Interestingly engineers and arbitrators are not sure which one is the best option to resolve construction disputes.

Each respondent was allowed to give their comment freely on the above selection. Respondents who agreed with adjudication better than arbitration came up with the following reasons.

- Construction industry experts who are acting as adjudicators provide a better solution than arbitrators.
- Less adversarial
- Less lawyer involvement will cause less formality
- Unlike in adjudication, arbitration is too much of a court procedure.
- The process is not complicated, easy to follow, and speedy solution

Respondents who believe arbitration is better than adjudication stated as follows;

- The award is legally binding and enforceable.
- Parties can select the expert or the characteristics of the expert to resolve their dispute without being in court.

Respondents who are not sure on the best method of arbitration and adjudication claimed, for arbitration or adjudication to work, parties should work in good faith. However, much the adjudicator or arbitrator is fair, very thorough, very professional, and trying to bridge the gap between the parties and do something, as long as we get parties that are not acting in good faith this won't work. This can link to the earlier question of how many disputes can be handled. These parties can tell that the adjudicator or arbitrator they should only work on the matters referred to them, not anything else. But if you look at it in good faith the parties should solve all the matters coming out in one go and go ahead with their contract without unnecessarily spending their time on dispute resolution. Parties to the disputes do not honor the adjudication/arbitration decision and try to drag it on as much as they can. They create potential issues for litigation. Therefore, accepting the ADR decision depends on the attitude of the parties. If the parties are genuine and if they want to solve the matter so they can work out the contract in hand, yes, adjudication or arbitration is better. But all around we see the system is failing because of these issues.

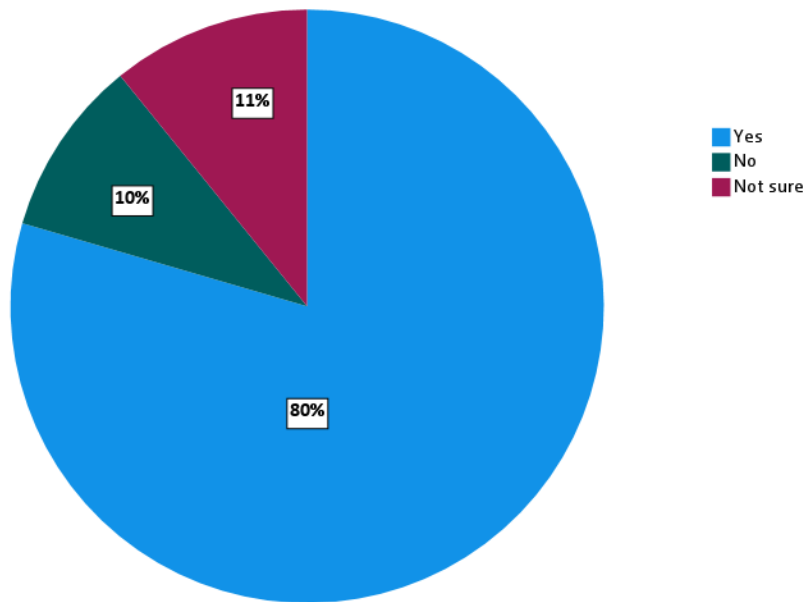


Figure 8 - 13 Efficiency of the adjudicator/arbitrator appointing process

As per Figure 8.14, 80% of the respondents believe the appointing process of adjudicator and arbitrator is efficient. Interestingly respondents who are not sure about it and who do not agree on the efficiency of the appointing process are almost similar.

Respondents were allowed to freely comment on their choice. Arbitrators and adjudicators suggested educating the industry people and others on the benefits of ADR on dispute resolution and appointing suitable professionals as adjudicators and arbitrators. Added to that, engineers and project managers commented that certain professional bodies in Sri Lanka appoint adjudicators/arbitrators who are less capable and competent in providing a decision based on facts of the disputes. It further proves the reliability of the adjudicator/arbitrator will affect the reliability of the process and the decision.

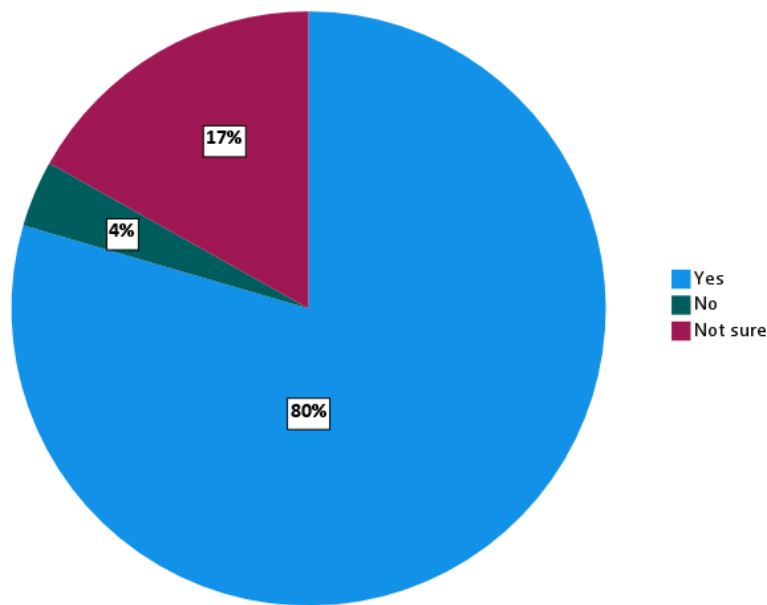


Figure 8 - 14 Time period available for ADR process

In Figure 8.15, the majority of the respondents claim that the time given for dispute resolution is adequate. However, quantity surveying professionals believe that time given for dispute resolution depends on the type of dispute and the circumstances of the project. Therefore, the majority of quantity surveyors were not sure about the answer to the above questions. Added to those, commercial lawyers mentioned the ADR time frame to be amended to fit the project scope. They further suggest making it mandatory for all mega projects to appoint at least adjudicators at the very beginning of the project. Therefore, the time spent to resolve disputes will affect the project completion badly. Even though one party wins and the other parties lose ultimately the project will have been hindered. Therefore, a robust ADR method is always a necessity for any project.

Respondents came up with the following as the likely reasons for the time overrun in dispute resolution in construction projects.

- Delay in getting required documents and information
- Disputing parties are not positively working on the dispute resolution process
- Parties have less knowledge of the ADR process.
- Unavailability of capable professionals for document preparation for both parties
- Unavailability of venue and professionals
- Unawareness of their obligations

- Involvement of lawyer
- Time spent on the proceedings
- Adjudicator/arbitrator and parties' commitment
- Unnecessary procedures in document submissions
- Somehow try to win
- Parties fail to submit their facts on time
- Late appointment or disagreement with the appointment of third-party decision-makers
- Non-compliance and availability of certain stakeholders for the process
- Restrictions due to epidemic/pandemic

Finally, an open-ended question was asked from the survey participants about their experience on the cost and time involvement in adjudication and arbitration practice in the Sri Lankan construction industry. There, except lawyers, all other professionals agreed that both ADR methods are time-consuming and costly. Lawyers explained that there are few occasions that arbitration was likely to be time-consuming and costly. However, properly administered Adjudication can resolve many issues inside closed rooms without major impact on time or cost. They further explained that, even though arbitration is likely to be costly (sometimes more than the claim amount) and time-consuming, in the case of the massive claims with the involvement of foreign parties, there is no alternative to arbitration as the only ADR method to resolve such kinds of disputes. Another, interesting comment on the cost of both ADR processes was the magnitude of the dispute. Several Quantity Surveying professionals commented that the claim amount and the complexity of the dispute also increased the time and cost of the resolution process. However, the majority confirmed the cost and time taken for court cases are more than the adjudication and arbitration practices in the Sri Lankan construction industry.

All the participants agreed that adjudication takes less time and cost than arbitration. They further added that, if the parties act positively during the ADR process, time and cost can be saved. The reasons commented by the survey participants on the cost and time of adjudication and arbitration processes are listed below.

- Every decision should be negotiated. But parties are not willing to accept their negligence.

- Mainly public sector employers are least bothered about time and money.
- No availability of enough clever Consultants.
- Parties do not have positive attitude in dispute resolution process.
- Not taking interest to resolve disputes immediately.
- Parties are not willing to come to an amicable solution.
- Parties to the dispute are incapable of understanding the process.
- Parties are not ready with relevant documents
- Unnecessary delay in document Submission.
- Less knowledge in both processes.
- Parties create more complications during the resolution process.
- Parties are not genuinely working to make the process efficient
- Bad documentation.
- Lack of commitment by both parties.
- Lack of dedication by some arbitrators and adjudicators.

8.7 Summary

The presented results are significant in one major aspect that is the reason for the unpopularity of both adjudication and arbitration. As indicated in the literature the major reason for the unpopularity is the cost and time taken for the process. It was further proved in chapter 6 and case study analysis in chapter 7.

It was proposed to have less than five disputes for one adjudication referral unless the disputes are inter-related. However, the number of disputes proposed to be referred for arbitration was not limited and both groups believe reason for disputes referred to arbitration is “disagreeing with the adjudication decision”. Therefore, it can conclude that adjudication is a prerequisite of arbitration. However, the reason to refer disputes for adjudication was commented on by Group 1 as “less knowledge in contract agreement” and Group 2 as “following the dispute clause”. This clearly indicates that whenever a dispute arises parties will follow the dispute resolution clause without referring to other solutions indicated within the clauses of the contract agreement. As a solution for that both the groups suggested appointing the adjudicator at the beginning of the project. However, the major barrier for that is the parties’ financial difficulty. “Poor knowledge in ADR” also

presented as another major reason for not appointing the adjudicator at the beginning of the project. Therefore, it is important to encourage construction industry professionals to get training and knowledge on ADR practices.

Considering the time factor in both methods adjudication takes more time for document preparation, and arbitration takes more time for witness hearings. Interestingly in both methods Group 1 proposes to have more time in witness hearings rather than document submissions. Therefore, it can be seen that the adjudicator/arbitrator more prefer in discussions in resolving disputes rather than confined to documents. However, the results indicate that the time allocated in the FIDIC document in dispute adjudication (84 days) is more reasonable than in SBD (28 days). However, the disputes referred to adjudication in the case studies are more than five and those are inter-related. Therefore, the time can be justified unless the parties did not request for time extensions in document submissions.

Increase in cost for both adjudication and arbitration is due to the time spent in resolution. Therefore, controlling the time spent for dispute resolution will enable to the reduction of the cost.

Finally, the results encourage using adjudication because of the lower complexity in the process. The major barrier for a successful adduction is the not having legal powers to enforce the adjudication decision. Therefore, the participants suggested bringing in the statutory adjudication for the Sri Lankan construction industry.

CHAPTER 9

9.0 Discussion and Framework Development

9.1 Introduction

The literature review has noted the important of having efficient ADR practices for the Sri Lankan construction industry. Further, it established a list of causes of disputes under several categories for the construction industry and list of attributes for ADR. However, for the Sri Lankan context 8 dispute categories were identified where human behaviour related ones were the major reason for most of the disputes. Attributes of current ADR practices in the Sri Lankan construction industry were examined in Chapter 6 and 7. Then Chapter 8 discussed the adjudication and arbitration practices in the Sri Lankan construction industry and their related issues and other external and internal ways to improve those methods.

This chapter presents the discussion on the findings of the primary and secondary data collected in previous chapters with the intention of developing a framework that can support improved Adjudication and Arbitration practices in the Sri Lankan construction industry. Specifically the framework incorporates the outcomes obtained during the four phases of the study and incorporates objectives 1-4 of this research as follows:

1. To examine the causes of disputes and their inter-relationships in relation to the Sri Lankan construction industry.
2. To explore the concept of ADR and its applicability for dispute resolution in the Sri Lankan construction industry.
3. To evaluate the current ADR practices with respect to attributes of ADR in the Sri Lankan construction industry.
4. To analyse the Sri Lankan construction industry specific aspects that relate to the successful implementation of ADR.
5. To develop and validate a framework for improved ADR practice for the Sri Lankan construction industry.

The framework development is presented in the following two sections. Firstly, the development of the framework using the primary and secondary data is discussed followed by a discussion on the validation process and its outcome for this framework.

9.2 Framework rationale

Chapter 2 identified that disputes have become one of the main causes of delay in construction (Sambasivan et al., 2017). Hence, litigation and alternative dispute resolution methods were introduced to the construction industry for the purpose of resolving construction related disputes (Gill et al., 2015). However, construction litigation involves complex technical issues, several parties and a large volume of documents (Fadhlullah Ng et al., 2019). Therefore, construction industry professionals much prefer ADR rather than litigation (Polinsky and Shavell, 2012). Even though there are several ADR methods used in the construction industry, five ADR methods were used occasionally in the Sri Lankan construction industry (Abeynayake and Weddikara, 2014a). Those are negotiation, mediation, conciliation, adjudication and arbitration. However, from the current study on ADR practices in the Sri Lankan construction industry chapter 6 confirmed that negotiation, adjudication and arbitration are the most practised ADR methods. Additionally, chapter 7 through case studies confirmed that adjudication and arbitration are a parties' contractual obligation when it comes to dispute resolution. Therefore, the framework development was carried out especially for the Sri Lankan adjudication and arbitration as this would be seen to be most beneficial to the Sri Lankan construction industry.

The theoretical attributes for ADR established in chapter 2 were examined and analysed against the current practice of ADR in the Sri Lankan construction industry in chapter 6. The main issues found as a result for both adjudication and arbitration are listed below.

- Neutral third parties were not considered as impartial and did not effectively complete the case management.
- In both processes the parties cannot appeal, parties will lose their control after the neutral third party's appointment. Further, it was revealed that adjudication and arbitration are contractual obligations where parties should refer disputes to both methods according to the standard form of contract. Since the settlement is not considered as fair, all the other attributes under settlement were found to be

negative in relation to adjudication and arbitration with the exception in relation to the binding decision for arbitration.

- The benefits normally expected by adopting ADR are not found with adjudication and arbitration in Sri Lanka as both practices were found to be costly and time consuming. Additionally, it was found that adjudication was considered as a pre-requisite of arbitration.

The findings of the chapter 7 case study presented the following issues in relation to adjudication and arbitration.

- Lengthy time taken to appoint neutral third party and perform preliminary meetings.
- Lengthy time taken in document preparation and witness hearings. This is often as a result of the lack of document communication which was identified as one of the major causes of disputes in the Sri Lankan construction industry in chapter 5.
- Lack of preparation by all parties when coming to ADR.
- Both adjudication and arbitration are costly and time consuming.

The framework was developed to provide solutions for these identified issues with respect to the attributes of ADR.

9.3 The Framework Development

The aim of the framework is to improve the efficiency of Alternative Dispute Resolution practices in the Sri Lankan construction Industry. With reference to the dispute resolution clause in the SBD, adjudication and arbitration are contractual obligations of the parties to the contract. Therefore, the developed framework is for both adjudication and arbitration in the Sri Lankan construction industry. The literature review (Chapter 2, 3) and the research findings (Chapter 5, 6, 7, and 8) mainly identified that enhancing the effectiveness of main and sub attributes will support an improvement in the adjudication and arbitration methods adopted by the Sri Lankan construction industry. The justifications for each of those attributes are discussed in the following sections including several other important aspects in developing the framework.

Several major points were considered in developing the framework. Those are, adjudication and arbitration as ADR practices, attributes of ADR, adjudication/arbitration

procedures, disputes, limitations, and costs. Those are grouped into two separate areas in the framework. One is the procedure of the adjudication and arbitration which are presented as “steps” in the framework. The others were considered in taking “Decision” for each step. The theoretical procedures adopted in adjudication and arbitration practices are based on SBD and the Arbitration Act No 11 of 1995 of Sri Lanka. Both arbitration and adjudication procedures were confirmed through the questionnaire survey in chapter 8 and are presented in table 9.1.

Table 9 - 1 Procedural Steps followed in the Proposed Framework

Step	Description
1	Request to nominate an adjudicator/arbitrator
2	Adjudicator/arbitrator appointment
3	Preliminary meeting
4	Preparation and submission of statement of claim
5	Preparation and submission of statement of response
6	Preparation and submission of reply by claimant
7	Hearings
8	Final statement by claimant
9	Final statement by respondent
10	Preparation and delivery of decision

Adjudication and arbitration attributes which is the base for the framework were presented as “Decisions” which are listed in table 9.2.

Table 9 –2 Decision making factors

Decision Gates	Main attributes	Sub attributes
Decision Gate 1	Jurisdiction	Dispute clause
		Relevance
		Type of dispute
		Party autonomy
Decision Gate 2	Neutral Third party	Impartiality
		Knowledge
		Effective case management
Decision Gate 3	CIDA nominated neutral third	Impartiality
		Knowledge
		Effective case management
Decision Gate 4	Process	Range of disputes
		Confidentiality of the process
		Privacy of the proceeding
		Flexibility of the proceeding
		Voluntariness
		Formality
Decision Gate 5	Settlement	Fairness
		Possibility for creative settlement
		Consensus of the parties for settlement
		Enforcement of the decision
Decision Gate 6	Benefits	Costs
		Speed to obtain
		Ease of implementation
		Addressing power imbalance
		Improvement of communication between parties
		Preservation of business relationship

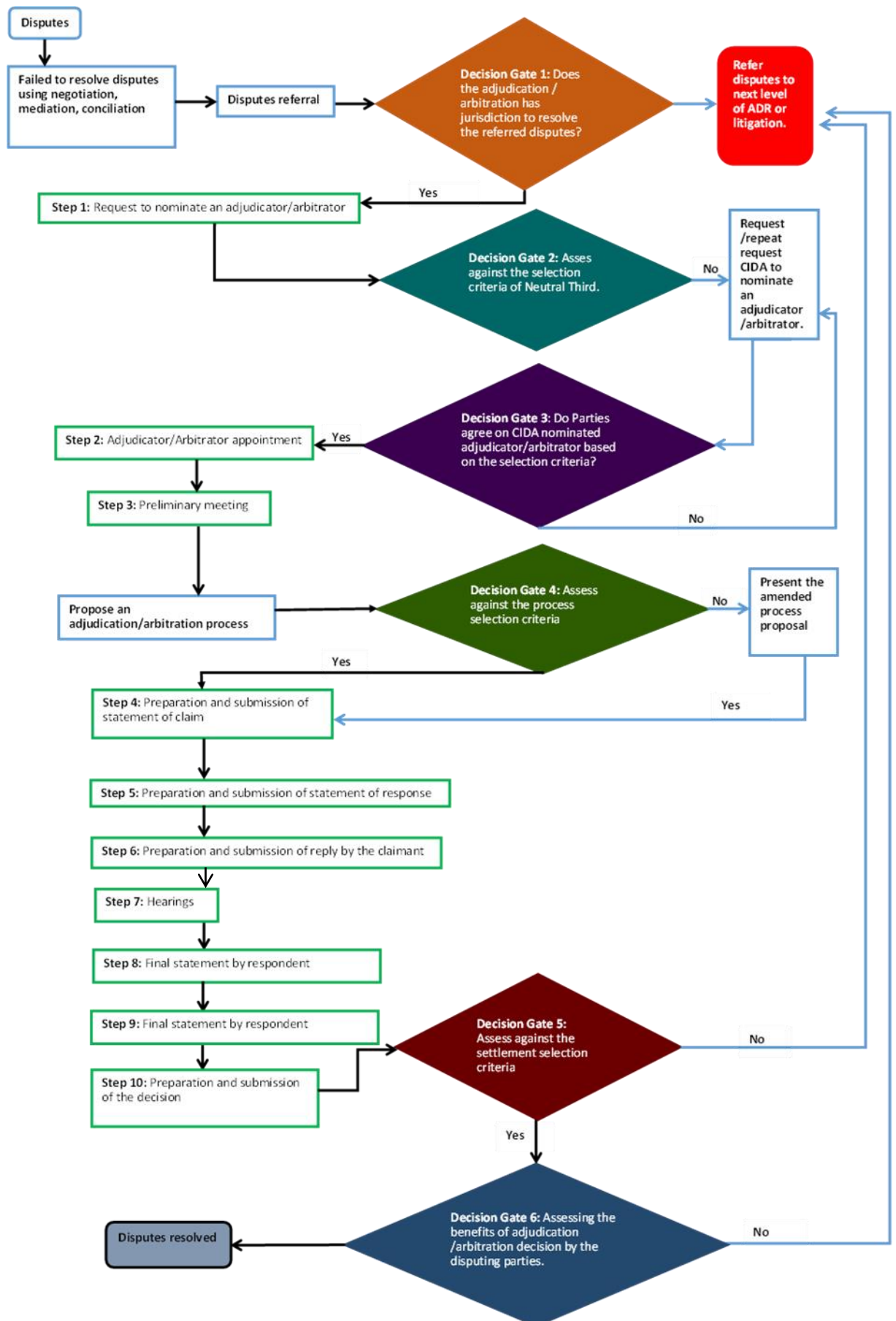


Figure 9 - 1 Proposed framework for an improved Adjudication/Arbitration practice.

9.3.1 Decision Gate 1 - Jurisdiction

Before starting dispute resolution through adjudication/arbitration it is necessary to check the adjudicator's/arbitrator's jurisdiction to resolve the referred disputes. Therefore, the following should be fulfilled by the neutral third party in order to resolve construction disputes.

- Adjudication/arbitration should be included in the dispute resolution clause of the contract agreement.
- The Dispute should be a commercial dispute which is relevant to the construction industry.
- The Dispute should not be a government policy, procedure or decision issue which can only be resolved through court procedure.
- The Disputing parties should agree to follow the adjudication/arbitration as the dispute resolution method.

9.3.2 Decision Gate 2 - Neutral Third Party

There are three attributes needed to be fulfilled by the proposed person to act as the neutral third party.

9.3.2.1 Effective Case management - It is the responsibility of the neutral third party to educate the disputing parties on the perceived benefits of ADR, such as being less expensive, confidential, voluntary, maintaining relationships, and so on.

Results of the study indicated that, even though the procedure is being explained by the adjudicator/arbitrator, this does not instil any confidence towards the adoption of ADR processes. Further, during the preliminary meeting of the adjudication/arbitration the neutral third party explains the procedure of the method, procedural rules and price structure for the process. However, it was revealed that in mediation, parties do agree on the availability of effective case management by the neutral third party

Therefore, educating and explaining the applicable procedure of ADR including the benefits will create confidence towards the resolution process and it will make parties accept the decision and act accordingly.

9.3.2.2 Impartiality - This is heavily dependent on the competence, training, and integrity of the neutral third parties.

The results indicate that the mediators are considered as impartial by the Sri Lankan construction industry professionals where conciliators, adjudicators and arbitrators are not. Not being impartial has an effect on accepting the final decision of the neutral third party.

When linking the above effective case management with the impartiality, the adjudicator/arbitrator can obtain the trust of the disputing parties by explaining and conducting the process clearly using proper communication and mediation skills. Therefore, providing clear information on the process and explaining the benefits of using ADR will create a positive atmosphere to the disputing parties which ultimately impact on the success of the process. This can further develop with the involvement of the government institution on ADR. Since the CIDA helps the disputing parties to appoint the neutral third party, CIDA should further monitor the ADR process and confirm the success of it. CIDA should make a mechanism to monitor the adjudication and arbitration processes along with the act of the neutral third party and the outcome. However, for the neutral third party to be impartial they should develop good attitudes, values, personality and know professional ethics.

9.3.2.3 Knowledge– The most obvious finding of the neutral third is the availability of knowledge. Neutral third party possesses qualifications such as Construction related undergraduate degree, post graduate degree, and professional qualifications. A few adjudicators and arbitrators had law qualification too. Everyone had more than 10 years of construction industry experience. Further, it was evident that the list of adjudicators registered in CIDA has the above-mentioned qualifications and experiences. However, it will be more helpful if they have knowledge on contract law and general law. Therefore, CIDA can implement training programs on contract and general law.

Further, the economic, financial, and other relevant policies approved by the government should be available at CIDA for construction industry stakeholders to refer to. Conveniently arranged workshops will support the transfer of knowledge in this area.

9.3.3 Decision Gate 3 –CIDA nominated neutral third

For the purpose of providing more opportunity for the parties to the dispute, Decision Gate 3 was introduced to the framework. If either party disagrees with the proposed

adjudicator/arbitrator, they can repeat the request from CIDA and appoint a suitable neutral third party.

9.3.4 Decision Gate 4 – Process

It is a common practice in ADR to discuss the procedure to be followed in adjudication and arbitration during the preliminary meeting. Decision Gate 4 of the framework will enable the parties to evaluate the proposed procedure by the adjudicator/arbitrator.

9.3.4.1 Range of disputes – Findings showcase that both the adjudication and arbitration process will not agree to adopt these specific ADR methods to resolve their disputes. If the dispute is related to government policy, procedure or decisions those disputes will not be able to be resolved through adjudication/arbitration but referred to litigation. In addition, criminal or legal matters (except contractual matters) arising out of the project cannot be referred to adjudication or arbitration for resolution.

In summary any contract related disputes coming out of the contract except government policy, procedure or decisions or legal/criminal matters can be resolved through adjudication or arbitration.

9.3.4.2 Confidentiality of the process – The ADR practices in the Sri Lankan construction industry is confidential as per the literature and primary data of this study. Therefore, continuing the current practice will enable this attribute to be achieved.

9.3.4.3 Privacy of the proceedings – ADR proceedings is private. Only the parties to the dispute, witness and any other person who is relevant to the case can be presented during the proceedings. Therefore, process is not open to external parties and it is private.

9.3.4.4 Flexibility of the proceeding – The ADR process is flexible. The flexibility defined here is the time extension for document submission and meeting time. The set and defined procedure either by the adjudicator/arbitrator or the contract agreement cannot be changed by the parties to the dispute.

9.3.4.5 Voluntariness – Once the disputes arise parties should consider the dispute clause in the contract agreement and work accordingly. Therefore, the dispute clause in the contract agreement contains the ADR methods to be followed along with their procedures. However, in several instances parties refer disputes to voluntary methods such as mediation or conciliation. But it is more important to follow an ADR with a positive attitude to make it successful.

9.3.4.6 Formality – Except in negotiation all other ADR methods are formal. The defined ADR procedure during the preliminary meeting will be adopted except for the time plan.

9.3.5 Decision Gate 5 - Settlement

It was found in chapter 6, 7 and 8 that disagreeing with the adjudication decision is common. Since arbitration is legally binding there is less chance to reject the arbitration award. Therefore, before rejecting the decision through the Decision Gate 5 parties can evaluate the given adjudication/arbitration decision.

9.3.5.1 Fairness – The settlement is not considered fair when the neutral third party is considered to be not impartial. When the parties disagree with the adjudication decision and refer to arbitration one of the main reasons mentioned in the ‘reason to refer to arbitration’ is the claim that the neutral third party is not impartial.

9.3.5.2 Possibility for creative agreement – The Adjudicator/arbitrator finalize their decision on the disputes based on the submitted documents and witness hearings. The neutral third party cannot prepare the decision considering any other information beyond what is submitted. However, the neutral third party should have sufficient problem-solving skills to resolve disputes and should rely on theoretical knowledge but also have practical knowledge.

9.3.5.3 Consensus of the parties for settlement – Some of the ADR decisions in the case studies were not agreed by parties and escalated to the next level of ADR for resolution. This indicates that there is no consensus of the parties on the settlement. However, by looking at all the previous attributes the parties’ consent for the final decision cannot be achieved at once. Parties’ consensus needs to be there from the beginning of the process for example agreeing to follow ADR, appointing a neutral third party and agreeing with the process. Then there is less possibility of rejecting the decision which is made with the consensus of the parties.

9.3.5.4 Enforcement of the decision – The Adjudication decision is binding until the dispute is referred to arbitration or litigation. Once the listed points under the Decision Gate 5 are achieved parties should accept the adjudication/arbitration solution on the disputes.

9.3.6 Decision Gate 6 –Benefits

The Decision Gate 6 gives another chance for the parties to evaluate before rejecting the adjudication/arbitration decision.

9.3.6.1 Costs - If Negotiation is used as an ADR, the dispute can be resolved with zero cost. In mediation and conciliation, the cost for the process is less compared to adjudication and arbitration. It was revealed that the costs of adjudication and arbitration are nine to thirteen times the mediation cost. In some instances, the arbitration cost was one and half times adjudication cost. This clearly shows that the adjudication cost and arbitration cost are much higher than the mediation cost.

Not only have that, but also adjudication and arbitration taken more time than mediation. Time taken to resolve disputes might impact on the cost of ADR or the cost of the project. Further, to reduce the overall cost of ADR this study suggested reducing cost components such as: arrange an in-house quantity surveyor to take care of preparation and advise on claims, reduce the time period and venue cost, start hearings early and spend the maximum time within the day to speed up the process. Table 9.4 summarised the cost components of both methods gathered through semi-structured interview 2, case studies and quantitative data.

Table 9 - 2 Cost components of Adjudication/Arbitration

Adjudication cost	Arbitration cost
Adjudicator's fee	Arbitrator's fee
Claim consultant fee	Claim consultant fee
legal counsellor fee	legal counsellor fee
Venue fee	Venue fee
Opportunity cost	Opportunity cost
Relationship cost	Relationship cost
Time	Time
Expert fee	Expert fee

9.3.6.2 Speed to obtain – It was revealed that negotiation takes less time to come to a solution where mediation and conciliation take more time. However, adjudication and arbitration take more time than the other three methods. In case study 1 mediation was completed within 7 days, adjudication within 137 days and arbitration went on for 150 days. In case study 2, the adjudication process went for 337 days and then arbitration was completed in 48 days. In case study 3, 4 and 5 the adjudication process was completed in 270, 270 and 96-days' time respectively. This demonstrates that adjudication and arbitration take more time to complete and reach a decision. The reason behind that was the continuous requests on extension from both parties, late start on hearings and moving from one ADR to other.

9.3.6.3 Ease of implementation – Except in arbitration all other methods of decision or outcomes can be implemented if parties are willing to accept and work together accordingly. Even when the parties agree on the ADR decision they do not act according to the decision. This denotes the parties' negative attitude. In arbitration, parties can go to court either to enforce or set aside the arbitrator's award.

As a result of the adjudication decision being less enforceable it was suggested to implement statutory adjudication for the Sri Lankan construction industry. It was suggested that if adjudication received statutory powers, the disagreeing party can refer to the courts and will lose the opportunity to refer to arbitration. Also, the adjudication procedure was designed to give a quick decision from an expert to avoid further delay in the project. Therefore, if adjudication becomes statutory not only the ideology of the adjudication will lose but also the arbitration will not be further used as an ADR.

9.3.6.4 Addressing power imbalance - Negotiation and conciliation practice in Sri Lanka do address the power imbalance within the parties to come to an agreeable settlement. But other ADR methods do not facilitate this. Addressing power imbalance is solely dependent on the appointed adjudicator or arbitrator. However, in negotiation only the disputing parties are involved, and each party tries to bring their side of the story to the negotiation table. When parties recognise their position in the dispute through the discussion this enables resolution of the dispute amicably through negotiation. In adjudication and arbitration, the neutral third party should work on this sub-attribute and help the disputing parties to get the benefit of using these methods of ADR.

However, according to Davis and Salem (1984) (Chapter 3) there are five steps suggested for power imbalance in mediation. Since the case study 1 mediation was successful the same steps given in the literature can be adopted in other ADR methods in order to provide this sub attribute as a benefit of using ADR for the disputing parties. Even though 'addressing power imbalance' is a benefit it is the responsibility of the neutral third party to prevent the power imbalance during the process. Therefore, to do the effective case management mediation skills will help the adjudicator/arbitrator to prevent the power imbalance during among the parties during the ADR process.

9.3.6.5 Improvement of communication between the parties – Communication between the parties will increase during negotiation, conciliation and mediation. Communication

between the parties has been identified as a major cause of dispute in this research. Therefore, to avoid further escalation in disputes, developing good communication between the parties is important. It is the responsibility of all parties to the dispute including the neutral third party to work to improve communication.

In this study under the neutral third-party, training on communication skills were included as an essential skill. However, improving the communication is not only the responsibility of the neutral third party. Parties to the dispute also needed to improve their communication skills. Therefore, getting help from the CIDA is important in that sense to arrange training programs for the professionals including contractors and employer.

9.3.6.6 Preservation of Business relationship - It was revealed that except in adjudication and arbitration the other ADR methods generally help to keep better relationships among the disputing parties. As explained in the literature, parties should have a positive attitude for negotiation to be successful. Possessing negotiating skills among the parties is another important aspect in any ADR. Therefore, this sub-attribute can be achieved collectively by all parties to the dispute with a positive attitude.

9.4 Validation of framework

The framework was validated through a focus group (see Chapter 4 section 4.9.3). The focus group comprised members belonging to categories namely adjudication, arbitration, quantity surveying, engineering and legal. Their profiles are presented in Chapter 4, table 4.10. The Framework validation ultimately contributed to achieving the objective 5 in this study.

On the date of discussion the framework was verbally presented to create a clear understanding of the framework.

After a brief presentation by the researcher the participants became familiar with the framework and then started commenting on the framework by elaborating some of their practical experiences. The discussion was recorded and the new ideas or rejected ideas from the previous sessions were referred to other sub-groups within the focus group.

9.4.1 Validation of the components

9.4.1.1 Jurisdiction - It is important to know the adjudicator's/arbitrator's jurisdiction to resolve disputes. If not as explained in Chapter 7 the adjudicator's decision can be challenged by referring to arbitration stating that adjudicator did not have the jurisdiction to resolve the dispute. Further, participants confirmed that once the adjudication is mentioned in the dispute resolution (DR) clause, parties should refer disputes to adjudication and parties' consent is not relevant. However, if there is a contract without the adjudication as the dispute resolution method still the framework can be used by asking whether the parties wish to refer the dispute to adjudication. It was suggested to reword the 3rd point in Decision Gate 1 as 'disputes of a commercial nature'. It is because not only the criminal matters but also several civil matters cannot be resolved through adjudication. The researcher found those suggestions logical and agreed with those amendments.

9.4.1.2 Neutral Third - The elements under the neutral third party were agreed. Other than the educational qualifications of the neutral third party, the need for them to have extensive experience in working in the construction industry was highlighted. Therefore, the experience was reworded as 'extensive experience in the construction sector in constructions and project management'. The researcher by revisiting the qualifications of CIDA registered adjudicators found this suggested change is appropriate.

9.4.1.3 Process - Control by the parties and voluntariness are two criteria under the process which are not applicable to adjudication or arbitration. The reason is after appointing an adjudicator/arbitrator the parties will not have any control over the adjudication or arbitration procedure. Further, the DR clause in the contract agreement emphasises that disputes should be referred to adjudication/arbitration. Therefore, both methods are not voluntary methods as confirmed in chapter 7. The researcher agreed to omit both criteria. As part of the validation, it was decided to reword 'range of disputes' to 'be the matters agreed as disputes'. Decision Gate 1 and 2 make sure of the jurisdiction of the adjudicator/arbitrator in resolving the referred disputes and the neutral third parties are competent in resolving disputes. Therefore, before proceeding further, it is important to agree on the disputes. Additionally, the time frame for the process needs to be discussed at this point.

9.4.1.4 Settlement - All the participants agreed with the given criteria under settlement. Further, it was agreed to assess the decision/award received through adjudication/arbitration before trying to disagree.

9.4.1.5 Benefit – A penalty is not available in adjudication or arbitration in the Sri Lankan construction industry. However, to improve process efficiency it is proposed to keep “penalty” as a criteria in this. With that note, the researcher suggested keeping the above criteria.

9.4.1.6 Steps in the Framework - Steps 8 and 9 were merged since both happen in parallel.

9.4.2 Feedback on practical implementation of the framework

After the detailed discussion on the elements in the framework the researcher inquired from the focus group members on the practical implementation of the framework. The participants supported the suggestions given in the framework to improve the adjudication/arbitration methods. They further emphasised that the framework has considered all the practical aspects of those two methods. Most importantly the framework did not change the approved theoretical procedure in adjudication/arbitration which is followed by the industry in Sri Lanka. The suggestions were presented as decisions which the neutral third party and the other parties can investigate and act accordingly.

Most importantly the participants suggested providing more training to the neutral third party and that awareness programmes should be offered to construction industry professionals on dispute resolution methods. This was something which the other data collected methods confirmed, specifically making the industry people aware of the benefits of using adjudication/arbitration and following the decision/award provided by both methods. It was further confirmed that providing continuous professional development programs for neutral third parties and industry professionals in this regard is highly important. Finally, it was suggested that all adjudication/arbitration cases should be collected at CIDA to follow up the work of neutral third parties in order to offer an insight on ADR methods, disputing parties and neutral third parties.

The modified and validated framework is presented in the following section.

9.4.3 Revised and validated framework

The revised validated framework is displayed in Figure 9.2. Two dialogue boxes explain the revised components including overall research data collection and analysis including input from focus group discussions.

There are two main components in the framework, process (Steps) and criteria (Decision Gate). Process represents the procedure adopted in adjudication/arbitration and the criteria represents the decisions needing to be made to make the process successful.

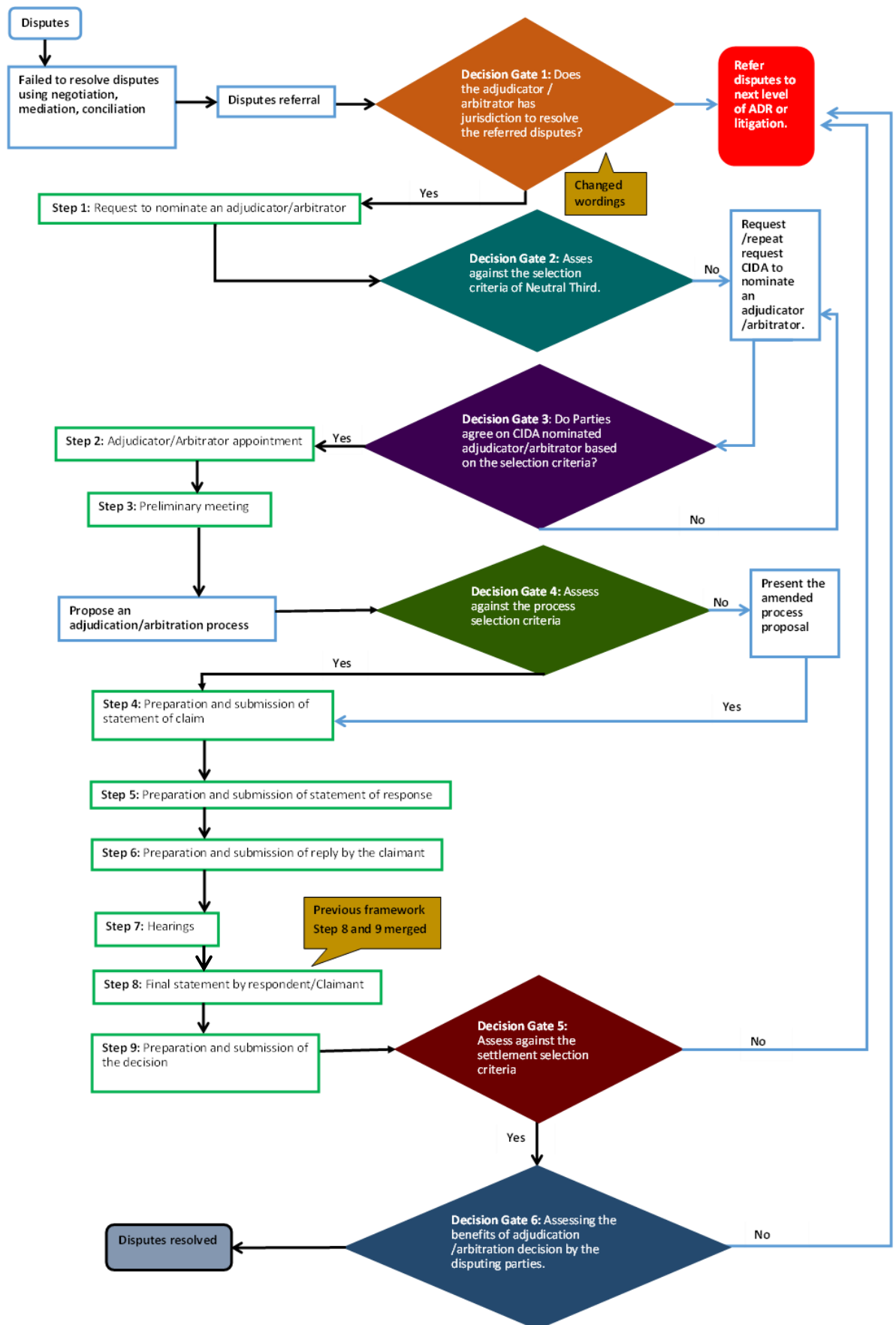


Figure 9 - 1 Revised Validated Framework for an improved Adjudication/Arbitration practice

9.5 Decision making criteria

This framework starts from disputes. Disputes that have failed to be resolved through negotiation, mediation, conciliation or any other voluntary methods will be referred to adjudication. As described below, Decision Gate 1 should be considered before proceeding with the adjudication.

Decision Gate 1: Does the adjudicator/arbitrator have jurisdiction to resolve the referred disputes?

The contract agreement should have the provision to refer disputes to adjudication/arbitration. If the answer is “**yes**” to the following conditions in the table, adjudication/arbitration has the jurisdiction to resolve the referred disputes. Therefore, **Decision Gate 1** will be established. If any of the conditions in the table are not agreed, referred disputes will not be taken for adjudication/arbitration; instead they can be referred to either arbitration or litigation.

Does the adjudicator/arbitrator have jurisdiction to resolve the referred disputes?		Yes	No
1	Does the dispute clause of the contract agreement have a provision for adjudication?		
2	Is the dispute not related to government policy decision?		
3	Is the dispute commercial in nature?		
4	Are the disputing parties agreed to follow adjudication/arbitration?		
	Answer for all should be Yes		

Decision Gate 2: Assess against selection criteria of the Neutral Third Party.

The neutral third party should have following listed attributes. If the proposed neutral third party is not impartial or does not have the required knowledge to resolve the disputes or has not demonstrated the ability to manage previous cases effectively, either party can disagree on the proposed adjudicator/arbitrator.

Hence, parties can request from CIDA to propose an adjudicator/arbitration with the consent of the disputing parties based on the attributes given in the following table.

Selection criteria for selecting Neutral Third party		Yes	No
1	Impartiality – Can assess from previous work		
2	Knowledge- Professional qualifications		
	Contract Law		
	Sufficient experience in the construction sector in construction and project management.		
3	Effective case Management		
	Answer for all should be yes		

Once the adjudicator/arbitrator is appointed then in the preliminary meeting the neutral third party will explain the proposed adjudication/arbitration process.

Decision Gate 3: Do parties agree on the CIDA nominated adjudicator/arbitrator based on the selection criteria?

Once CIDA proposes an adjudicator/arbitrator the parties should check the competency of the neutral third party based on the selection criteria listed in Decision Gate 2. If the proposed neutral third party is not to the accepted criteria the parties can repeat the request from CIDA.

Decision Gate 4: Criteria for selecting the process.

The process should have the following listed attributes for the parties to agree. Therefore, the adjudicator/arbitrator should be aware of the list of attributes, or the parties should communicate with the adjudicator about their interest to amend the process according to the listed attributes.

In the listed criteria 1-4 are essential and 5-8 are desirable.

Criteria for selecting the process		Essential	Desirable
1	Range of disputes		
2	Confidentiality of the process		
3	Privacy of the proceeding		
4	Flexibility of the proceeding		
1-4 are Essential			
5	Control by the parties		
6	Voluntariness		
7	Formality		
8	Ability of the parties to appeal		
5-8 are Desirable			

Decision Gate 5: Assess against the settlement selection criteria.

The decision/award given by the adjudicator/arbitrator should have the following traits for parties to accept. However, to have a binding decision in adjudication, parties should agree on the decision where the arbitration award can be enforced in the courts. Therefore, if the parties do not agree to accept the decision the disputes will be referred to the next level of ADR or litigation.

Selection for settlement criteria		Yes	No
1	Fairness		
2	Possibility for creative settlement		
3	Consensus of the parties for settlement		
4	Scope of remedy to satisfy interest		
5	Binding decision/settlement		
Answer for all should be yes			

Decision Gate 6: Do the parties realise the benefits of the settlement decision?

Even though parties agree on the adjudication/arbitration decision the disputing parties do not act according to the adjudication/arbitration decision. Therefore, Decision Gate 6 will enable the parties to reflect on the given decision and then follow it rather than escalating it to another ADR.

Benefits of adopting the provided decision/settlement.		Essential	Desirable
1	Costs		
2	Speed to obtain		
3	Ease of implementation		
4	Addressing power imbalance		
5	Improvement of communication between parties		
6	Preservation of business relationship		
1-6 are Essential			
7	Penalty		
7 is Desirable			

Penalties should be decided during the preliminary meeting if the parties do not follow the decided timeline, process or any other. If either party believes those benefits are not available in adjudication, they will refer the dispute to the next level of ADR or litigation.

9.6 Chapter Summary

The chapter discussed the attributes to be improved through the framework by adding value to the adjudication and arbitration methods. The “Steps” and “Decision Gates” in the framework were developed from the literature and the primary data in this study. It was confirmed that the theoretical procedure presented in the literature on adjudication and arbitration are similar to the current practice in the Sri Lankan construction industry. Criteria listed in Decision Gates are the improved version of main and sub attributes of ADR developed from the findings of chapter 6, 7 and 8. Each Decision Gate will determine the successful completion of adjudication and arbitration.

Decision Gate 1 will enable the parties to identify the nature of the dispute and its suitability to refer to adjudication or arbitration. Decision Gate 2 helps to evaluate the proposed neutral third party and Decision Gate 3 will give another chance for the parties to reject the proposal and redo the appointment of the adjudicator/arbitrator. Chapters 6, 7 and 8 confirmed that on many occasions parties disagree with the adjudicator’s decision claiming that it is the fault of the adjudicator. The major allegation presented by the parties is that the “neutral third party is not impartial”. Therefore, Decision Gates 2 and 3 will help the parties to evaluate and redo the adjudicator/arbitrator appointment. Chapter 8 findings confirmed that most of the construction professionals are not aware of the ADR methods and do not trust the process with respect to dispute resolution. Decision Gate 4 will help to understand and evaluate the adjudicator’s/arbitrators proposed process during the preliminary meeting and complete the necessary amendments before they proceed with the process. Most importantly the timeline for the process and penalties if applicable should be agreed here. Finally, from Decision Gate 5 and 6 the parties were given an opportunity to reflect on the decision provided and the benefits of following it. The case study 1 of chapter 7 showcases that all three ADR methods proposed the same solutions where the disputing parties did not respect to follow. However, if the parties to agree/disagree the adjudication/arbitration settlements evaluating the criteria listed in Decision Gates 5 and 6 will enable to justify parties’ agreement/disagreement.

In short, the framework identifies the potential decisions that a construction professional can take for a successful adjudication/arbitration. The framework was validated through

focus groups. The validation provided an opportunity for retesting the applicability of the framework in the construction industry.

CHAPTER 10

10. 0 Conclusions and Recommendations

10.1 Introduction

This concluding chapter summarizes the key findings in relation to the research aim and objectives as well as the value and contribution thereof. It will also discuss the limitations of the study and propose directions for future research.

10.2 Achievement of research aim and objectives

The aim of this study was to develop a framework for improved Alternative Dispute Resolution practices for the Sri Lankan construction industry. In wider range the effectiveness of the proposed ADR framework was achieved by improving the main attributes, sub attributes and the process of ADR. Literature synthesis and empirical data were used in developing the framework as well as validating. However, this study determined the lapses in current ADR practice with respect to the ADR attributes, relevant changes to attributes based on the legal and traditional practices in Sri Lanka, and the understanding of the industry practitioners on ADR.

The following sections provide an outline of the processes that were followed to establish the achievement of the research aim and objectives.

Objective One: To examine the causes of disputes and their inter-relationships in relation to the Sri Lankan construction industry.

Nine (9) categories of disputes and a list of causes of disputes related to the global construction industry were identified through the literature review. However, for the Sri Lankan construction industry through empirical data it was found that only eight (8) categories of disputes are applicable. Out of those eight categories 'Human Behavioural related disputes' were the prominent dispute category for the Sri Lankan construction

industry. Among the 'Human behavioural related disputes' the two most common causes of disputes were 'lack of document communication' and 'lack of team spirit'.

It was revealed that during the adjudication/arbitration process disputing parties spend more time on document preparation. The decision/award of adjudication/arbitration is mainly dependent on the submitted documents. Therefore, it was proposed to allocate more time for the document preparation in the timeline of the process. However, that time causes more damage to the efficiency of the process.

It further revealed that disputing parties refer disputes to several ADR even though the same decision/award is received. It shows the attitude and the lack of team spirit of the parties to the contract. In that sense, as suggested in the framework it would be better to agree on a penalty when the parties are not adhering to the agreed timeline or any other which causes the inefficiency of the ADR process.

The data revealed that causes of disputes are interrelated. Therefore, when one dispute emerges it will become the cause for other disputes. Out of all the disputing categories 'Human Behavioural relate disputes' was not only the most common disputing category but also had many links to other disputes.

However, the literature confirmed that different parties working together to achieve one or more goals will create disputes and it is important to find those causes to take remedial actions to mitigate those. The result of dispute mitigation will increase the project efficiency.

Objective Two: To explore the concept of ADR and its applicability for dispute resolution in the Sri Lankan construction industry.

Several alternative dispute resolution methods could be found in the literature. Out of those methods there are a number of commonly practised ADR in Sri Lanka, such as negotiation, mediation, conciliation, adjudication, and arbitration. However, when the adversarial nature of the dispute resolution increases the enforceability of the decision increases along with the cost of resolving disputes.

In the Sri Lankan construction industry "Negotiation" is used as an initial attempt to resolve any disputes. It was found that negotiation, mediation and conciliation are voluntary methods, where parties refer their disputes even though it is not available in the agreement. However, adjudication and arbitration are the most commonly used ADR in the

Sri Lankan construction industry to resolve any contract related disputes. It is because the construction agreement (contract) mainly directs to those two methods of dispute resolution. Therefore, it can be concluded that adjudication and arbitration are contractual obligations with reference to dispute resolution. Construction contracts in Sri Lanka are based on the conditions of contract specified by SBD. SBD does not encourage the use of voluntary methods. This indicates the importance of improving adjudication and arbitration practices in the industry.

The disputes found in Objective 1 can be resolved through the commonly practicing ADR in the Sri Lankan construction industry. However, negotiation is the first attempt at resolving any kind of disputes; failing that they will be referred for the other ADR methods. Mediation was suggested to be used for project related, external factors related and consultant related disputes. Conciliation was proposed as a better method for design related disputes. However, adjudication and arbitration were suggested to resolve any kind of dispute. Selecting the suitable ADR method to resolve those disputes depends on several factors such as the cost of the claim, nature of the project and stakeholders and several others. According to the Sri Lankan context, the significant findings are that negotiation is the initial attempt in dispute resolution, adjudication and arbitration are contractual obligations to the parties with respect to dispute resolution, and along with the type of dispute there are several other factors to take into account when deciding on the selection of ADR.

Objective three: To evaluate the current ADR practices with respect to attributes of ADR in the Sri Lankan construction industry.

Alternative dispute resolution was introduced to the construction industry to resolve disputes with less cost, time and to enable business continuation. To verify it the currently practised ADRs found in objective two (negotiation, conciliation, mediation, adjudication and arbitration) were evaluated against the theoretical attributes from the literature. There were four main attributes: neutral third party, process, settlement and benefits. Those four (4) attributes were further divided into sub attributes. The significant finding is that out of five ADRs negotiation, conciliation and mediation displayed more positivity towards the theoretical attributes. The major issue in those three voluntary methods is the lack of enforceability which causes contract parties to spend more time and money in dispute resolution. Out of all the ADR methods adjudication and arbitration take more time and money to resolve disputes. The settlement and benefits of both adjudication and

arbitration are less than the above voluntary methods. Therefore, it is evident that adjudication and arbitration practices are unpopular in the Sri Lankan construction industry even though SBD/CIDA endorses them as the key clause in relation to dispute resolution.

Another major factor affecting the success of the ADR is the parties' attitude. Further, power to compel consolidation is not applicable in either ADR and adjudication and arbitration are not voluntary methods but contractual obligations as presented in objective 2. Further, the sub-attribute "knowledge in construction" was suggested to be changed to "knowledge". It was further defined as the industry experience, professional qualification related to construction, and knowledge of contract law.

However, it was revealed that adjudication is practised according to the SBD and arbitration is practised according to the Arbitration Act No 11 of 1995 of Sri Lanka. Therefore, the inherent characteristic of those will affect the listed theoretical attributes of ADR. Hence, several sub-attributes were identified as insignificant. They are ability of the parties to appeal, control by the parties, and scope of remedy to satisfy interest, and penalty.

It was found that less complex interrelated disputes can be resolved with less time. One of the interesting findings was parties follow all the listed ADR in the contract agreement even though they received the same decision. It was further revealed that parties to the disputes appeared in ADR without proper preparation. Therefore, during the adjudication/arbitration, parties take more time for document preparation and the process take more time for witness hearings. This ultimately affects the total time and cost of the process. Since those are public projects, parties are wasting public money intentionally. Therefore, having an improved ADR is very much essential for the Sri Lankan construction industry.

Objective Four: To analyze the Sri Lankan construction industry specific aspects that related to the successful implementation of ADR

It was further confirmed here that the less complex disputes can be resolved in less time. Therefore, it was suggested to refer less than five disputes to adjudication and arbitration to reduce the time taken to reach a resolution. The study has identified two main reasons for disputes being referred to adjudication. One is the lack of knowledge in contract agreements, where parties sign contracts without properly understanding the conditions

of the contract. The second reason is whenever disputes arise parties refer to the dispute resolution clause in the contract agreement and follow it. Considering the time factor, more time was proposed for document preparation than the other listed steps in the framework. The overall time proposed from this study for the adjudication process was similar to the time allocated in FIDIC adjudication. It was suggested to appoint the adjudicator at the beginning of the project to resolve disputes as soon as they arise. However, the parties' poor financial issues have become the barrier for that. Therefore, the proposed framework was developed for adjudication and arbitration after the dispute crystallized.

It was suggested to develop statutory adjudication due to the enforceability nature of the current contractual adjudication.

If adjudication fails, disputing parties will refer their disputes to arbitration. Further, the adjudication was taken as a prerequisite for arbitration as per the SBD conditions of contract. The most significant finding is the poor knowledge of ADR of the construction industry professionals in Sri Lanka.

Objective five: To develop and validate a framework for improved ADR practice for the Sri Lankan construction industry.

This objective was achieved by developing a framework to improve adjudication/arbitration practices through literature and empirical data of this study and validating it through focus groups. The developed framework is presented in Chapter 9. The framework consists of two main components namely process (Steps) and criteria (Decision Gates). Process consists of nine steps. Each step denotes the actions which need to be from the beginning and the end of the process. Six Decision Gates were formulated according to the jurisdiction of adjudicator/arbitrator, appointing adjudication/arbitration, CIDA nominated adjudicator/arbitrator, process, settlement and benefits. Neutral third party, process, settlement and benefits were further divided into sub-attributes developed using empirical data. Those main and sub attributes are relevant to the Sri Lankan context.

Through the Decision Gate 1-jurisdiction, disputes which cannot be resolved through adjudication/arbitration will not be referred to either method. This will avoid unnecessary delay in dispute resolution. A CIDA nominated adjudicator/arbitrator will enable the parties to rethink the proposed neutral third party and request a new proposal using Decision Gate 3.

Finally, the framework was validated by a focus group and identified the practical application of the framework. Further, the focus group explained that providing relevant guidance and knowledge on the framework will enable them to have a successful adjudication and arbitration practice in the Sri Lankan construction industry.

10.2 Achieving the research Aim

The main research question of this study was “Why are Alternative Dispute Resolution practices in the Sri Lankan construction industry inefficient? “. To achieve the research aim there were five objectives formulated which were explained in the above section.

Through the literature and empirical data, the reasons for the unpopularity of ADR practices in Sri Lanka were identified as the cost, time and relationship damage. Also, out of all the available ADR in the Sri Lankan construction industry adjudication and arbitration were found to be the most commonly used ADRs. The developed framework for improved adjudication and arbitration practices were mainly divided into two components, process and criteria. Attributes of ADR which were considered as the criteria of the framework were the key indicators that evaluate the performance of ADR. Therefore, to improve ADR, the main attributes (neutral third party, process, settlement, and benefits) and sub attributes according to the Sri Lankan context were adopted.

10.3 Contribution to knowledge

The contribution to knowledge is in two parts comprising theoretical and practical. This section presents each of these parts.

10.3.1 Theoretical contributions and propositions

The research discussed that improving main and sub attributes along with the document communication and team spirit will enable us to have improved ADR practices in the Sri Lankan construction industry. Therefore, the theoretical contributions of the research are presented below:

1. The findings of the thesis explain the importance of knowing the specific causes of disputes in the Sri Lankan construction industry. Lack of document communication and lack of team spirit are the common causes of disputes in the Sri Lankan construction industry. Further, it was revealed that the majority of the disputes are interrelated. Therefore, when one dispute occurs, it will lead to several other disputes. However, human behaviour related disputes link to all other dispute categories.
2. The main attributes of ADR are neutral third party, process, settlement and benefits. Through the research, the impartiality of the neutral third party is questionable. However, the neutral third party should have considerable knowledge in dispute resolution. The suggested time for adjudication was nearly 84 days and for arbitration it was nearly six months. It further explains that parties need more time in document preparation. If both parties exercise proper document communication, the time can be reduced.
3. The study found that the parties refer the disputes to all the available ADR without considering the cost and time spent on the process. However, the framework avoids parties disagreeing with the settlement without providing proper justifications. It was further discovered construction industry professionals are not showing responsibility and accountability on peoples' money.
4. Finally, the findings of this thesis have demonstrated new evidence and insights and contributed to the current knowledge in the academic field of ADR, with the development of the framework. This framework identified the ways to improve ADR current practice in Sri Lanka by improving the attributes of ADR. Therefore, this framework can be used to have an improved ADR practice for the Sri Lankan construction industry.

10.3.2 Practical contribution

This thesis has contributed to understanding the dispute categories and disputes relevant to the Sri Lankan construction industry along with commonly occurring disputes. Further, the identified construction disputes are inter-related. The development of attributes and the practical use of the framework are the most important aspects as discussed below.

- The developed framework in this study recognises the key areas to be addressed in having an improved ADR for the Sri Lankan construction industry. The framework can be used as a guide to creating standards in ADR practices in Sri Lanka where all in the dispute should contribute professionally to resolve the disputes carefully.
- The developed framework will enable the contracting parties to work and take decisions as a team. Since each step in the framework leads to the successful completion of ADR where parties can take collaborative decisions, the team-building and communications within the parties will improve.
- Stakeholders in the construction industry should have suitable training on ADR practices. The professional bodies related to the construction industry should conduct continuous professional development workshops on dispute resolution practices in the Sri Lankan construction industry. Further, CIDA should inspect the project stakeholders' knowledge of dispute resolution. This can be done at the time when companies are registering or re-registering with CIDA.
- CIDA need to develop guidelines to conduct ADR for construction projects. This will enable the contracting parties to avoid doubts about the ADR procedure and its conduct. Further, CIDA should make provisions for dispute negotiation and make it significant in the CIDA conditions of contract. CIDA also should provide proper training on developing the negotiation skills of the contracting parties.
- Dispute resolution clauses in SBD documents should be updated. As presented in the new FIDIC, 2017 document CIDA should encourage the contracting parties to avoid dispute occurrence rather than resolution by making the necessary amendments to the SBD condition of contracts.
- The outcomes of objective 2 encourage the contracting parties to use other voluntary ADR methods before referring their disputes to adjudication/arbitration.

- Since the common disputes are lack of teamwork and lack of document communication parties were encouraged to use collaborative forms of contract to avoid disputes.
- Construction industry stakeholders' cultural differences and attitudes will not affect the adjudication/arbitration when the developed framework is used.
- Project managers can use the list of disputes relevant to the Sri Lankan construction industry to avoid dispute occurrence in their projects. That list of disputes can be shared with the all stakeholders and pre-meetings on dispute avoidance can be conducted.

10.4 Research limitations

The following limitations were experienced while conducting the research.

1. The developed framework was not validated and applied in a real case scenario, which would enable greater rationalisation of its components.
2. The field of construction field constantly change due to its technology development. Therefore, the type of disputes and the way ADR practices may change in the future and the factors considered in this framework will be outdated.
3. Finally, this research is Sri Lanka focused and no direct comparisons have been made with the global environment, thus restraining the generalizability in terms of the global context. However, it can still be relevant for countries with similar construction industry structures and legal systems to those of Sri Lanka.

10.5 Recommendations

1. To address the common causes of disputes in the Sri Lankan construction industry, namely the lack of team spirit and insufficient document management as noted in the data analysis chapters (Chapter 5,6,7 and 8) it is recommended that contracting parties in the Sri Lankan construction industry consider utilizing relationship contract theories, such as New Engineering Contracts (NEC). These types of contracts provide a framework that enables parties to establish longer-term relationships, foster substantial commitment from both sides, and promote a high degree of

communication and cooperation (Colledge, 2005). To implement the above, following actions are recommended.

- **Emphasize Collaborative Decision-Making:** Promote a culture of collaborative decision-making among all project stakeholders. Encourage open dialogue, active participation, and involvement of all parties in decision-making processes. This approach ensures that decisions are made collectively, taking into account various perspectives, and helps prevent disputes arising from unilateral actions.
- **Foster Effective Communication:** Establish clear channels and protocols for communication among all project participants. Encourage regular meetings, project progress updates, and information sharing to maintain transparency and alignment. Effective communication reduces misunderstandings, facilitates early issue identification, and supports timely dispute resolution.
- **Strengthen Document Management Practices:** Implement robust document management systems and procedures to ensure efficient handling, storage, and retrieval of project-related documentation. Emphasize the importance of accurate record-keeping, document control, and version management. By maintaining well-organized and up-to-date documentation, parties can mitigate disputes arising from misunderstandings or lack of information.
- **Establish Performance Metrics and Incentives:** Define clear performance metrics and incentivize cooperation and teamwork. Consider incorporating key performance indicators (KPIs) related to collaboration, communication, and dispute resolution into contractual agreements. Reward parties who demonstrate a commitment to teamwork and effective resolution of issues.

2. For the purpose of enhancing communication skills, particularly document communication skills which was found during the data analysis as a commonly available cause of disputes in the Sri Lankan construction industry, it is indeed beneficial for construction professionals to undergo training programs. Such training can significantly improve recordkeeping and handling practices in the industry.

Below training programs are suggested to implement by the Construction Industry Development Authority (CIDA).

- Document Management and Organization: This course can cover effective methods for managing and organizing construction documents, including plans, contracts, permits, and reports. It can emphasize the importance of maintaining accurate records and provide strategies for efficient document retrieval.
- Technical Writing and Report Preparation: This course can focus on enhancing written communication skills specific to the construction industry. It can cover topics such as writing clear and concise reports, technical documentation, progress updates, and project proposals. Participants can learn about effective formatting, grammar, and structuring of documents.
- Effective Communication Strategies: This training program can emphasize the significance of effective communication in construction projects. It can cover various communication methods, such as email, memos, and meeting protocols. Participants can learn about active listening, conflict resolution, and how to convey information accurately and professionally.
- Collaboration and Team Communication: Construction projects involve collaboration among various stakeholders. This course can focus on improving interpersonal communication skills, fostering teamwork, and managing communication within multidisciplinary project teams. It can cover techniques for effective collaboration, including meetings, presentations, and collaborative software tools.
- Recordkeeping and Regulatory Compliance: This training program can educate professionals on the importance of appropriate recordkeeping and compliance with industry regulations. It can provide an overview of relevant laws, standards, and best practices for record management. Participants can

learn about the retention and disposal of documents, data protection, and legal implications of poor recordkeeping.

When arranging these training programs, CIDA should consider collaborating with industry experts, experienced trainers, and professional organizations to ensure the courses are tailored to the specific needs of construction professionals.

3. It was found that in the Sri Lankan construction industry shows the limited utilization of voluntary methods such as negotiation, mediation, and conciliation due to the prevalence of contracts following the Standard Building Contracts (SBD) from CIDA. To address the issue, it is recommended that CIDA takes the following steps to promote these alternative dispute resolution (ADR) methods and achieve cost and time savings:

- **Develop Good Practice Guidance Notes:** CIDA should create comprehensive guidance notes that specifically focus on the effective use of voluntary methods for dispute resolution in construction contracts. These guidance notes should outline the advantages, processes, and best practices associated with negotiation, mediation, and conciliation. CIDA should collaborate with relevant stakeholders, including professional organizations, industry associations, and legal bodies, to develop and disseminate the guidance notes effectively. By providing practical guidance and examples, CIDA can empower parties to employ these ADR methods more frequently.
- **Raise Awareness and Educate Stakeholders:** CIDA should actively raise awareness among construction professionals, contractors, and other stakeholders about the benefits of voluntary dispute resolution methods. This can be accomplished through targeted awareness campaigns, industry seminars, webinars, and informative publications.
- **Provide Training and Capacity Building:** CIDA should organize training programs and workshops to enhance the knowledge and skills required for successful negotiation, mediation, and conciliation in the construction

industry. These training initiatives can target professionals involved in contract administration, project management, and legal advisory roles.

- Monitor and Evaluate: CIDA should establish a monitoring and evaluation mechanism to track the adoption and effectiveness of voluntary dispute resolution methods in construction contracts.

4. It was identified that in the Sri Lankan construction industry disputing parties are reluctant to implement decisions made through voluntary alternative dispute resolution (ADR) methods, particularly due to their attitudes. Therefore, it is recommended that CIDA develop training programs focusing on the attitudes of the parties involved. These programs can help foster a positive mindset and enhance the willingness to implement ADR decisions.

- Attitude Awareness Training: CIDA should design training programs that create awareness among construction professionals, contractors, and stakeholders about the impact of attitudes on the successful implementation of ADR decisions. These programs can highlight the importance of adopting a cooperative and open-minded approach, emphasizing the benefits of constructive attitudes in resolving disputes and maintaining long-term relationships.
- Conflict Resolution and Emotional Intelligence Training: CIDA should incorporate conflict resolution and emotional intelligence training into the programs. These trainings can provide participants with techniques to manage and navigate emotions effectively during the dispute resolution process. Emotional intelligence can be defined as “the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships” (p. 375) (Goleman 1998). By developing emotional intelligence and conflict resolution skills, parties can approach ADR decisions with a more balanced and rational mindset, enhancing the likelihood of successful implementation.

- Education on the Benefits of ADR: CIDA should ensure that the training programs include education on the advantages and positive outcomes associated with voluntary ADR methods. By highlighting the potential for win-win resolutions, reduced costs, and faster dispute resolution, the programs can help shift participants' attitudes towards perceiving ADR decisions as beneficial and worthy of implementation.
 - Continuous Support and Reinforcement: CIDA should offer ongoing support and reinforcement to the participants after the training programs. This can be in the form of mentoring, access to resources, and periodic follow-ups to address any challenges they may face during the implementation of ADR decisions.
5. To ensure effective communication and understanding among professionals with varying knowledge levels involved in Sri Lankan construction projects, it is recommended that CIDA provide translated copies of the Standard Building Contracts (SBD) in Sinhalese and Tamil, the two official languages of Sri Lanka. Since the data analysis emphasized the lack of communication skills create most of the disputes in the Sri Lankan construction industry it is important to find every relevant aspect of it to minimize the issue. This will help create a simplified version of instructions that can be comprehended by all stakeholders. Further, CIDA should establish a feedback mechanism to gather input from professionals and stakeholders regarding the usefulness and effectiveness of the translated SBD documents. This feedback can help identify areas for improvement, address any language or comprehension challenges, and ensure that the translated versions remain accurate and user-friendly over time.
6. It was identified that even the provision is there to appoint an adjudicator at the beginning of the construction projects in Sri Lanka to have an effective and efficient resolution of dispute matters, it is recommended that CIDA explore possibilities for providing adjudicators at the beginning of the project. This proactive approach can

help address disputes promptly and minimize their impact on project progress. In order to do that following actions should be taken by CIDA.

- **Feasibility Assessment:** CIDA should conduct a comprehensive feasibility assessment to evaluate the practicality and potential benefits of providing adjudicators at the beginning of construction projects. This assessment should consider factors such as the scale of projects, financial implications, availability of qualified adjudicators, and the potential for early dispute prevention and resolution.
- **Financial Support:** Recognizing the financial constraints that contracting parties may face, CIDA should explore options to provide financial support or incentives for the appointment of adjudicators at the beginning of projects.
- **Education and Awareness:** CIDA should conduct educational programs and awareness campaigns to highlight the benefits of early adjudication in construction projects. These initiatives should target project owners, contractors, and industry professionals, emphasizing the potential cost savings, time efficiency, and reduced disruption to project progress that can be achieved through early dispute resolution.

7. To address deep-rooted professional rivalries in the Sri Lankan construction industry which was found during the data collection and the focus group discussions that hinder teamwork in construction projects, it is crucial for construction professionals to cultivate a collaborative attitude from the beginning of their educational journey. Therefore, it is recommended that team-based activities demonstrating dispute resolution be incorporated into undergraduate, post-graduate, and professional-level courses. CIDA can take a leadership role in implementing followings,

- Curriculum Integration: CIDA should collaborate with educational institutions offering construction-related courses to integrate team-based activities focused on dispute resolution into their curricula.
- Interdisciplinary Collaboration: Encourage interdisciplinary collaboration by integrating students from different disciplines, such as architecture, engineering, project management, and law, into team-based activities.
- Emphasis on Soft Skills Development: Alongside technical knowledge, place a strong emphasis on developing soft skills essential for effective teamwork and dispute resolution.
- Industry Engagement and Support: CIDA should actively engage with industry stakeholders, professional associations, and construction firms to gather support for this initiative. Collaborating with industry partners can ensure the relevance and practicality of the team-based activities, as well as provide opportunities for students to interact with industry professionals and gain real-world insights.
- Continuous Evaluation and Improvement: Regularly evaluate the effectiveness and impact of the team-based activities on students' attitudes and collaborative skills. Gather feedback from students, faculty, and industry professionals to identify areas for improvement and make necessary adjustments to enhance the learning experience.

8. To address the issue of unenforceability of adjudication decisions which was identified as a major barrier to use adjudication effectively in the Sri Lankan construction industry, it is recommended that in-depth discussions be held to explore the development of statutory adjudication whilst recognising its limitations. This will help identify the challenges and potential solutions for making adjudication decisions legally enforceable. Recommend CIDA facilitate stakeholder consultation involving industry professionals, legal experts, government representatives, and relevant organizations. These discussions should focus on understanding the limitations of the current adjudication system and exploring

possibilities for developing a statutory framework that ensures enforceability of adjudication decisions.

Based on the insights gained from stakeholder consultations and comparative analysis, CIDA should work with relevant government authorities, legal experts, and industry stakeholders to develop a comprehensive legal framework for statutory adjudication. Then conduct piloting adjudication programs for the selected construction projects and evaluate the effectiveness and identify the practical challenges to improve further.

9. According to this study not only the construction but also to have a successful completion in the dispute resolution collaborative approach within the parties to the contract is important. Therefore, it is recommended to establish open discussion forums for construction professionals. These forums will serve as platforms for knowledge sharing, exchanging experiences, and fostering dialogue on dispute prevention and resolution. CIDA can take the leadership on this matter by providing discussion forums, facilitating knowledge sharing sessions and continues collaboration with industry and academic members.

10. Develop an ICT-enabled decision support system to further assist the effective implementation of the developed framework. This system will leverage technology to provide valuable tools and facilitate effective decision-making during the implementation of adjudication and arbitration process.

10.6 Further research directions

The research identified types of disputes, interrelationship among disputes, ADR methods, ADR attributes and sub attributes relevant to the Sri Lankan construction industry. Specifically, lack of document communication and lack of team spirit have been understood as the common disputes in the Sri Lankan construction industry. It is now time to specifically address those two disputes in the Sri Lankan construction industry. Not only that, it was found that the human behaviour related disputes are linked to all other categories. Therefore, it is the time to see a way to have a construction industry with less

impact from human behaviour related disputes. The proposition derived from this research, which can inform further research in this is as follows:

- Way of Human behavioural adaptation for dispute minimization in the Sri Lankan construction industry.
- Study on ways to improve human behaviour in the construction sites.
- Good record keeping will reduce the time for ADR.

Further, the neutral third party has shown to be significant in ADR practices. Another suggested further research is to link the role of the neutral third party with the dispute handling styles in the construction industry. The negative attitudes of the professionals were evident in the focus group study of this research. The researcher was unable to take all the focus group members to one table to do the discussion due to their attitudes. The differences in professional and education qualifications and the previously submitted ADR decisions have made the professionals refuse to have discussion around one table. The proposition derived from this research, which can inform further research in this is as follows:

- Construction industry professionals' attitude and dispute handling.
- The construction industry professionals' responsibility and accountability for public money: with respect to dispute resolution.

By considering the scope and the limitations of this study, the following further research can be conducted in future.

- Further validation of the developed framework for improved ADR through further case studies.
- Improvements need to be done on the developed framework with respect to the technology development.
- Study on the possibilities of Guidance note preparation by CIDA for ADR methods.
- It enabled decision support system

10.6 Chapter summary

This chapter included the outcomes of the thesis and provided an overview of the achievement of the research objectives, contribution to knowledge, limitations and future research directions. This research has addressed the aim of the study, identified the dispute causes, attributes of ADR and cost components of ADR. Further, it provided a contribution to knowledge that enables the industry professionals to use ADR efficiently.

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Appendix 1

Ethics form Examples of the participant information sheet and
consent forms



Date received	Initials	LJMU REC Ref

UREC Research Ethics Application Form

No research (studies on human participants or their data (including service evaluations, audit etc.)) must be started without full, unconditional ethical approval. There are a number of routes for obtaining ethical approval depending on the potential participants and type of study involved – please complete the checklists below to determine which is the most appropriate route for your research study.

1. Pedagogic Research (ONLY complete if you are a member of staff undertaking pedagogic research – otherwise, please leave blank)		YES	NO
	Is the proposed study being undertaken by a member of LJMU staff?		NO
	Is the purpose of the study to evaluate the effectiveness of LJMU teaching and learning practices by identifying areas for improvement, piloting changes and improvements to current practices or helping students identify and work on areas for improvement in their own study practices?		NO
	Will the study be explained to staff and students and their informed consent obtained?		NO
	Will participants have the right to refuse to participate and to withdraw from the study?	Yes	
	Will the findings from the study be used solely for internal purposes? e.g. there is no intention to publish or disseminate the findings in journal articles or external presentations		no
If you have answered YES to all 1a-e , your study may be eligible for consideration under the University's Code of Practice for Pedagogic Research. You should not complete this			

<p>application form but seek further guidance at https://www2.ljmu.ac.uk/RGSO/114123.htm or by contacting researchethics@ljmu.ac.uk.</p>
<p>If you have answered No to any of 1a-e, please complete the checklists below</p>

2. Requirements for NHS Research Ethics Committee & Health Research Authority Approval		YES	NO
<p>Is the study defined as research by the HRA AND is there a regulatory or NHS policy requirement for the study to be approved by a NHS REC? (https://www.hra.nhs.uk/approvals-amendments/what-approvals-do-i-need/)</p> <p>* Please note when completing the decision tool, (http://www.hra-decisiontools.org.uk/ethics/) LJMU researchers can store human tissue according to the LJMU HTA licence (https://www2.ljmu.ac.uk/RGSO/93204.htm)</p>			no
<p>Is the study defined as research by the HRA AND will the study involve NHS organisations in England where the NHS organisation has a duty of care to participants, either as patients/service users or NHS staff/volunteers (references to participants include people whose data or tissue is involved in a research project)? https://www.hra.nhs.uk/approvals-amendments/what-approvals-do-i-need/hra-approval/</p>			no
<p>Is the study defined as research by the HRA AND will the study/project be led from Northern Ireland, Scotland or Wales and involves NHS/HSC sites? https://www.myresearchproject.org.uk/help/hlpnhshscr.aspx</p>			no
<p>If you answered NO to 2a then your study can be ethically approved by UREC. Please complete the checklist below to determine whether your application is eligible for proportionate review (applications can be submitted at any time) or full review at UREC</p>			

meetings (please refer to the deadlines for submission - https://www2.ljmu.ac.uk/RGSO/93126.htm)
If you answered YES to 2a , please DO NOT complete this ethics application form . You must complete an IRAS form (https://www.myresearchproject.org.uk/) and seek NHS REC approval. https://www.hra.nhs.uk/approvals-amendments/what-approvals-do-i-need/research-ethics-committee-review/
If you answered YES to 2b , you must complete an IRAS form (https://www.myresearchproject.org.uk/) and seek HRA approval (in addition to either NHS REC or UREC approval – as determined by your answer to 2a). https://www.hra.nhs.uk/approvals-amendments/what-approvals-do-i-need/
If you answered YES to 2c , you should apply for NHS/HSC R&D Permissions (in addition to either NHS REC or UREC approval (as determined by your answer to 2a) through the appropriate NHS/HSC permission process for that lead nation (https://www.myresearchproject.org.uk/help/hlpnhshscr.aspx)
If you answered NO to 2b or 2c , please seek ethical approval as determined by your answer to 2a .

3. Full versus Proportionate Review - will the proposed study:		YES	NO
	Expose participants or researchers to activities that pose a significant risk of causing physical harm or more than mild discomfort, psychological stress or anxiety or levels of risks beyond those, which the participant is likely to experience whilst participating in their everyday activities? These risks may be related to psychological or physical health, social standing or connectedness, economic well-being, legal harm or devaluation of a person's self-worth (<i>e.g. untrained volunteers exposed to high levels of physical exertion; participants purposefully exposed to stressful situations; exposure to pain; risk of injury or damage; research where participants are persuaded to reveal information which they would not otherwise disclose in the course of everyday life; lone working</i>		no

	<i>at night; interviewing in the researcher's or participant's homes, observation in potentially volatile or sensitive situations etc.)</i>		
	Involve the discussion or disclosure of topics which participants might find sensitive or distressing? (e.g. sexual activity; criminal/illegal activity; drug use; mental health; previous traumatic experiences; illness; bereavement; disclosure and analysis of findings based on sensitive personal information as defined by Data Protection Act e.g. racial or ethnic origin; political opinions; religious beliefs; trade union membership; physical or mental health; sexual life)		no
	Involve the administration of drugs, medicines or nutritional supplements as part of the research design?		no
	Involve the collection of venous blood samples?		no
	Involve the collection and/or use of human tissue from healthy volunteers? Please note, samples collected for a research purpose and subsequently processed to leave it acellular with any residual cellular material immediately discarded is NOT considered human tissue and is therefore not regulated by the HT act or the LJM Human Tissue License		no
	Include adults who may be classed as vulnerable? e.g. drug/substance users; young offenders; prisoners/probationers; those in a dependent relationship with the researcher; those who have an impairment of, or a disturbance in, the mind or the brain. e.g. dementia, mental illness, learning disability, brain damage, intoxication, any other condition causing confusion, drowsiness or loss of consciousness (e.g. concussion, stroke, heart attack, epileptic fit, serious accident, delirium).		no
	Include children (below 16) NOT in an educational setting/accredited organisation OR where active, opt-in parental consent and child assent will not be sought?		no
	Involve focus groups with children (below 16) with more than 8 participants in each focus group and/or the age range within the focus		no

	group is more than 3 years and/or the focus group will last more than 90 minutes in duration?		
	Include children (under 11) who will not be supported when undertaking the protocol?		no
	Involve recruiting participants who have not been provided with a participant information sheet and asked to sign a consent form? <i>Please note that for questionnaire-based studies a consent form is generally not request as consent is implied by the completion of the questionnaire. Applicants conducting questionnaire-only studies should answer NO</i>		no
	Involve conducting observations (including ethnography) in a non-public place?		no
	Involve participatory/action research?		no
	Involve deliberately misleading participants in any way?		no
	Involve cash payments to participants for anything other than the reimbursement of reasonable expenses or reasonable incentives that are not pro-rata or are unequal between participants (including participants who withdraw)?		no
	Be conducted outside of normal working hours or at a time and place inconvenient to participants?		no
	Be conducted outside the EU or in one of the 3 non-EU EEA member countries?	yes	
	Involve accessing and analysing existing datasets that will not be anonymous to the researcher?		n/a
	Involve the sharing of directly or indirectly identifiable data with other organisations outside of LJMU or with people outside of the research team?		no

	Involve the dissemination of directly or indirectly identifiable data/information without a participants consent (e.g. the use of social media or the internet as a data source – unless the website or social media account is maintained by a public or commercial organisation)?		no
<p>If you have answered No to all 3a-s your study is eligible for proportionate review. Complete this application form and submit as ONE pdf document (the application form and all supporting documents) at any time to EthicsPR@ljmu.ac.uk. Your application will be reviewed by a UREC sub-committee, all being well, within 10 working days. Please note, the UREC sub-committee finds that your application has been wrongly submitted for proportionate review, you will be notified and your application will be consideration at the next available UREC meeting.</p>			
<p>If you have answered Yes to any of 3a-s your study must be submitted for full review. Complete this application form and submit as ONE pdf document (the application form and all supporting documents) to researchethics@ljmu.ac.uk by the deadline advertise (https://www2.ljmu.ac.uk/RGSO/93126.htm). Your application will be considered at a UREC meeting. Guidance on completing the LJMU REC application form can be found at http://www2.ljmu.ac.uk/RGSO/93044.htm</p>			

<https://www2.ljmu.ac.uk/RGSO/93085.htm>

Research Mode

- **Undergraduate** – specify course

- **Postgraduate** (Type **YES** in the boxes that apply)

<input type="checkbox"/>	MRes
<input type="checkbox"/>	MPhil
<input checked="" type="checkbox"/>	PhD
<input type="checkbox"/>	Prof Doc e.g. EdD or DBA
<input type="checkbox"/>	Other taught Masters programme – specify course

<input type="checkbox"/>	Postdoctoral
<input type="checkbox"/>	Staff project
<input type="checkbox"/>	Other – please specify, Staff – SLIIT Campus, Sri Lanka

- Has this application previously been submitted to the University REC for review? –
~~Yes~~ / No

- If yes please state the original
Ref Number

REC

- Please confirm whether the Principle Investigator (PI) has successfully completed the LJMU Research Ethics Training and a copy of the certificate of completion emailed to the PI has been appended to this ethics application (<https://www2.ljmu.ac.uk/RGSO/131507.htm>)

Please type **YES** or **NO** in the box below

YES

(Please note all students **MUST** have completed the LJMU Research Ethics Training **BEFORE** they start to complete the ethics application form. Where student PIs have not completed the training, ethics applications will be rejected).

- Student research - please confirm that an email/letter from the supervisor has been appended to this ethics application confirming that:

a) the supervisor has read and reviewed this ethics application form and all supporting documents

b) the information included in the application and all supporting documents will allow UREC to decide whether all challenges to the principles of research ethics have been identified and addressed

Please type **YES** or **NO** in the box below

YES

Section A – The Applicant

A1. Title of the Research

Optimization of cost incurred in ADR practices in the Sri Lankan Construction industry

A2. Principal Investigator (PI) (Note that the in the case of postgraduate or undergraduate research the student is designated the PI. For research undertaken by staff inclusive of postdoctoral researchers and research assistants the staff member conducting the research is designated the PI.)

Title Forename Surname

Post

School / Faculty

Email Telephone

Relevant experience / Qualifications

13 years of industry experience, 4 and half years of teaching experience.

- B.Sc.(Civil) Engineering - Kothalawala Defense University, Sri Lanka, 10/ 1996 to 10/ 1999

- Diploma in Commercial Arbitration - The Institute for the Development of Commercial Law and Practice, September 2013 to October 2014
- Training course in Construction Management - The Centre for Housing Planning and Building
, March 2009 to June 2009
- Certificate in Contract Administration in the Institute of Sri Lanka Quantity Surveyors – United Arab Emirates, August 2014

A3. Co-applicants (including student supervisors)

Co-applicant 1 / Academic Supervisor 1 (where the application is being submitted by a student, either undergraduate or postgraduate, details of their main dissertation supervisor must be included. The form must be submitted with a letter or email from their named supervisor indicating that they have read the application and are willing to supervisor the student undertaking the proposed study – **STUDENT APPLICATIONS WILL NOT BE REVIEWED UNTIL NOTIFICATION OF REVIEW BY THE NAMED SUPERVISOR IS RECEIVED**

Title Forename Surname

Post

School / Faculty

Email Telephone

Relevant experience / Qualifications

--

Co-applicant 2 / Academic Supervisor 2

Title

 Forename

 Surname

Post

School / Faculty

Email

 Telephone

Relevant experience / Qualifications

--

Where there are more than two co-applicants, please append an additional page to your application containing the relevant details

B1. Proposed date for commencement of participant recruitment (Please enter the date when you propose to start recruiting participants – note that no recruitment can take place without full, unconditional ethical approval)

Start date:

January 2019

B2. Scientific justification – please provide an overview in plain English - please avoid abbreviations and explain technical terms. State the background and why this is an important area for research (*Note this must be completed in language comprehensible to a layperson. Do not simply refer to the protocol. Maximum length – 1 side of A4*)

The Sri Lankan construction industry contributes 6.7-7.6% of GDP to the country's economy by providing services, end products and, 9.7% of employment out of all the industries in Sri Lanka. The nature of the construction industry itself is complex, its environment is challenging in which a number of different knowledge-based professionals are working together to achieve one or more goals. Once trying to achieve the goals by different viewed people is a tendency to generate disagreements which leads to a dispute. Originally "dispute" defines as, "a specific disagreement concerning a matter of fact. The dispute has become one of the main causes of delay in construction. The negative influence of conflict on the performance of construction organizations has been addressed by several studies and highlighted its negative impact such as delay, interruption, or suspension of the whole construction work. There are two types of dispute resolution forms which practice in the industry, as litigation and alternative dispute resolution (ADR). Key issues concerning dispute resolution generally are the costs and time involved and the effect on a long-term relationship. The construction industry has shown a marked preference towards ADR instead of litigation due to its Speed, Cost, Expertise, Privacy and Practicality. Still it is being identified that cost spend for ADR is getting high. Therefore, it is important to identify the cost generating in ADR and how to optimize it.

B3. Give a summary of the purpose, design and methodology of the planned research. What do you propose to do and how do you propose to do it? Provide information as appropriate in plain English (comprehensible to a layperson) to help the REC understand and approve your application.

- a) Participants – who are they? What will happen to them? How many times? In what order? Where? When? How? How long will take them? Etc.
- b) Interventions/procedures - Give details (How? When? Where? How often? For how long? Etc.) of all interventions/procedures that will be received by the participants as part of the research protocol (intervention/procedures might include seeking consent, screening questionnaires, interviews, questionnaires for data collection, exercise, measurement variables etc.)

This research will firstly examine the causes for the dispute in construction industry and the available dispute resolution methods. Consideration will then be given to the alternative dispute resolution methods use in Sri Lankan construction industry which comparatively cost effective, speed and practical than the litigation. This will then more focused towards the cost of ADR procedure and the activities which generate the cost. More studies will be done in identifying a way to optimize the cost incurred during the ADR process and will then be used to propose a conceptual framework to optimize the cost incurred in the Sri Lankan Construction industry ADR practice. Finally, this will be presented to a focus group to validate the findings.

The research methodology adopted is a pragmatist research philosophy to facilitate the linking of practice and theory using a mixed methods approach.

The first stage is to gather qualitative data by undertaking semi structured interviews with 18 number of Mediators, Adjudicator, Conciliators and industry professionals.

The second stage is to gather quantitative data and produce a questionnaire that will be distributed over a large sample group (500 nos) representing construction

industry professionals. This will be used to validate and consolidate the data gathered in the first stage.

The third stage is to present the findings to a focus group of representatives (6 nos) from the construction industry which will include Mediators, Adjudicator, Conciliators and industry professionals.

B4. State the principal research question

The overall research aim of this study is to develop a framework for cost optimization of alternative dispute resolution in the Sri Lankan construction industry.

To achieve the aim a number of supporting objectives have been developed, which are as follows:

1. Examine construction disputes in Sri Lankan construction industry
2. Examine alternative dispute resolution practices in Sri Lankan construction industry.
3. Analyze the cost of alternative dispute resolution processes in Sri Lankan construction industry.
4. Develop a framework for cost optimization of alternative dispute resolution of alternative dispute resolution methods in Sri Lanka.

B5a. Give details of the proposed intervention(s) or procedure(s) and the groups of people involved (*including psychological or physical interventions, interviews, observations or questionnaires*)

intervention(s) or procedure(s)	Participants (e.g. LjMU students,	Number of participants required	Avg. time to complete	Where will the intervention /
---------------------------------	-----------------------------------	---------------------------------	-----------------------	-------------------------------

(e.g., interviews, questionnaires, Vo2max test, blood sampling, force platform, health-screening questionnaire etc.)	athletes, general public, children etc.)			procedure take place (LJMU classroom, LJMU laboratory, participant's homes, public places etc.)
1. Interviews	Sri Lankan construction industry practitioners	24	Two hours per each	Work place
2. Questionnaires	Sri Lankan construction industry practitioners	150	On line	
3.				
4.				
5.				
6.				

To include additional interventions place your mouse cursor in the last cell of the final column and press the tab button on your keyboard. A new row will be created for the above table.

B5b. Studies involving questionnaires to collect data. Please confirm that you have:

- I. Appended the questionnaire as it would be presented to the participants. This might include an introduction, instructions for completing the questionnaire,

instructions for returning/submitting the questionnaire and any signposting to support services where applicable.

- II. Included at the start of the questionnaire, a statement of implied consent and a tick box for participants to confirm implied consent, which you can copy from the consent form template.
- III. Included at the start of the questionnaire, a statement that makes it clear that participants have the option of not answering questions they do not want to answer.
- IV. Requested the age of the participant at the start of the questionnaire, stated the age requirement and included instructions that those younger than the age requirement should not complete the questionnaire.

Please type **YES or NA** in the box below

YES

Have the questionnaires previously been validated?

Please type **YES, NO or NA** in the box below

NO

If YES, please include the references and state the population in which the questionnaire was validated

B5c. Where interviews or focus groups (structured or semi-structured) are proposed you must append an outline of the questions you are going to ask your participants. Please confirm that you have attached an outline of your interview / focus group questions.

Please type **YES or NA** in the box below

yes

B6. How will the findings of the research be disseminated?(e.g. thesis, dissertation, peer-reviewed articles, conference presentations, reports)

The findings will be distributed by thesis in addition to being presented at conferences and publications in journals.

The participants will also be provided with a copy of the findings after completion upon request.

SECTION C – THE PARTICIPANTS

Please give separate details for different study groups where appropriate. Participation in a research project must be entirely voluntary, and no one must be coerced to participate in a research project against his/her will. Researchers should avoid exerting undue influence when approaching potential participants. No sanctions should follow if the participant decides to withdraw from the research at any time.

Gatekeepers - A gatekeeper is any person or institution that acts as an intermediary between a researcher and potential participants (e.g., school authorities, sports club, treatment service providers, a coach, instructor etc.). The use of a gatekeeper may be necessary:

- To help identify participants where a researcher does not have legitimate access to personal data of potential participants (names and contact details or information related to identifying participants in relation to the inclusion/exclusion criteria of the study)
- Where it may also be more appropriate or good etiquette to ask a gatekeeper to make the first approach to potential participants – and in specific circumstances to take an active role in recruiting the participants

To minimise and manage potential risks (e.g. to gain permissions to access facilities, use a gatekeeper's resources such as their facilities and their staff and to undertake the research within certain hours etc.)

C1. How will the participants been selected, approached and recruited? (Where different groups of participants have been identified in section B5a above provide details on how each group will be selected, approached and recruited.)

The participants are known contacts of the researcher from the industry.

The participants for the questionnaire will be contacted by e – mail and for the interviews either via e mail, telephone or personally. The participants will be allowed one week to consider if they wish to participate.

C1a. Please indicate how individuals will be IDENTIFIED as potential participants.

- If the researcher will need to access an individual's personal data, please explain why they would have legitimate access to the personal data (according to the data protection act).
- If using a third party, such as a gatekeeper, to identify participants, records or samples please explain why and provide details of their relationship with the potential participants. (e.g., school authority, coach, treatment provider etc.)

The participants were identified by considering the known contacts of the researcher and subsequent networks available from these contacts.

It was calculated that around 500 questionnaires would be distributed amongst these contacts and it was assumed that a 30% return would be achieved. Resulting in the completion of 150 questionnaires.

For the interviews key experts in the field of ADR were considered to be essential to support the findings these were then added to focus groups which consist of professionals who do ADR practices.

C1b. How, where and by whom will the potential participants be initially APPROACHED/CONTACTED? (e.g. face-to-face, by email/letter, telephone, referrals (e.g. by a gatekeeper or by snowballing etc.), social media, poster, flyers, presentation to a group of individuals etc.)

- Consider how to approach participants without revealing private information to others (e.g. an email sent to a group of individuals who have identified themselves as dyslexic to the gatekeeper but not to each other)
- Time & place – Is it easy for potential participants to say yes or no?

ADR practitioners will be initially approached by emails by giving details of the project recruitment purpose and the meeting place will be a public place which convenient to both parties.

Questionnaires will be sent Bristol online survey which taken from the researcher's contacts.

C1c. Please confirm you have appended a copy of the recruitment emails/letters/posters/adverts etc. Please type YES or NA in the box below

yes

If you wish to send a participant recruitment email/letter then in the text please state:

- How the person was identified as a potential participant
- How you have accessed their contact details / who has provided permission for you to access their contact details / who is emailing the potential participants on behalf of the researcher.
- Something like "if you are interested in participating in the study please take time to read the participant information sheet (attached) and contact me with any questions. I can be contacted....").
- Inform the participant what they should do if they would like to participate

C1d. Participant RECRUITMENT (the process of obtaining informed consent from participants). Please explain (e.g. who, when, where, how) the process of fully informing participants, gatekeepers and parents/guardians about the purpose, methods and intended possible uses of the research, what participation in the research entails and what risks, if any, are involved. *(Exclusively relying on simply handing out a participant information sheet should be avoided. Researchers should be able to verbally explain the study clearly to potential participants, provide a*

participant information sheet for participants to keep and be available to answer questions)

It is mentioned in the participation information sheet attached as Annex.

C1e. How will the participant access the information sheet after they have consented? (e.g., will they be provided with a paper / electronic copy to keep?
Online questionnaires - consider asking the participant to print/make an electronic copy of the participant information sheet)

Please note that where the study involves the administration of a questionnaire or survey a signed record of consent is not required for completion of the questionnaire as long as it is made clear in the information sheet that completion of the questionnaire is voluntary. Under these circumstances return of the completed questionnaire is taken as implied consent.

In such cases the REC would expect a statement to be included at the start of the questionnaire where the respondent confirms that they have read the participant information sheet and are happy to complete the questionnaire.

Participation in any other interventions within the same study eg interviews, focus groups must be supported by obtaining appropriate written consent.

C1f. How long will the potential participants have to decide whether they would like to participate? (Potential participants need time to consider fully the implications of taking part in research. They should be able to ask questions and reflect. Participants should not be rushed into decisions - There are no fixed guidelines for the time to be allowed to participants. It has been common practice to suggest a minimum of 24 hours, but this is not an absolute rule. Each study should be considered on its own merits. If you feel that a shorter period is

reasonable in the circumstances and taking into account the nature of the study, please justify this in your answer)

Time given for questionnaires to be completed is one month and if the participants didn't respond during that period will take it as not respondent.

C2. How was the number of participants decided? (e.g. was a sample size calculation performed)

The participants were determined by considering the known contacts of the researcher and subsequent networks available from these contacts. It was essential to contact experts in ADR process in the construction industry.

It was calculated that around 500 questionnaires would be distributed amongst these contacts and it was assumed that a 30% return would be achieved. Resulting in the completion of 150 questionnaires.

For the interviews key experts in the construction industry and field of ADR.

C3a. Will any of the participants come from any of the following groups?

- Whether children are considered vulnerable is dependent on the child's circumstance, their susceptibility to coercion, the type of research being undertaken and how and where the research is being undertaken
- Please note that the Mental Capacity Act 2005 requires that all research involving participation of any adult who lacks the capacity to consent through learning difficulties, brain injury or mental health problems be reviewed by a NHS REC. For further information please see <http://www2.ljmu.ac.uk/RGSO/101579.htm>
- Vulnerable adults & participants with a dependent relationship with the researcher: This question is designed to ascertain whether your participant groups are likely to need special consideration regarding issues of informed consent and the potential for perceived pressure to participate.

Type YES in all boxes that apply

☐

Children under 16

☐

Children under 18 considered vulnerable

☐

Adults with learning disabilities

☐

Adults with mental illness (if yes please specify type of illness below)

☐

Drug / Substance users

☐

Young offenders

☐

Those with a dependant relationship with the investigator (e.g. a coach etc.)

☐

Other vulnerable groups please specify below

Please provide details that might help the REC understand the ethical issues related to the characteristics of the participants and how they might be addressed. *(e.g. age of participants; why participants might be considered vulnerable; ethical implications with regards to mental illness, drug users, young offenders; the dependent relationship between participant and researcher etc.)*

Please justify their inclusion:

C3b. If you are proposing to undertake a research study involving interaction with children or vulnerable adults do you have current, valid clearance from the UK Disclosure and Barring Service (DBS)?

☐

Yes

☐

No

☐

Not Applicable

C4. What are the inclusion/exclusion criteria?

- The answers to the questions below will help the REC understand how you will ensure the quality of the study, how you will minimise any potential risks/hazards and whether there is the potential for any particular participant groups to be exploited or unfairly excluded.
- Participants need to be fully informed about the inclusion/exclusion criteria – please include the relevant information in any recruitment materials and information sheets

C4a. On what basis will individuals be included or excluded (eligible/ineligible) from your study in order to address the research question/objective? (*Consider the characteristics of the target/study population*)

Questionnaire- the participants must be experts in construction industry minimum 5years experience who involved in ADR process

Interviews - The participants need to have more than 15 years of experience in the construction industry and must be ADR practitioners.

C4b. On what basis will individuals be included or excluded (eligible/ineligible) from your study in order to minimise/manage risk? (*e.g. those with a food allergy, injury, mental or physical health issues etc.*)

No risk

C4c. How will you apply/implement each of the inclusion and exclusion criteria? (e.g. will potential participants self-include/exclude themselves based on the information provided on the participant information sheet – or will you assess the potential participants in some way – such as with a health screening questionnaire or physiological measurements – please explain)

Interviews need to done with professionals who have more than 15 years of industry experience and who are ADR practitioners.

Questionnaire survey will be carrying out with industry professionals who has involved in dispute resolution and having more than 5 years working experience in the industry.

C4d. If applying the inclusion / exclusion criteria requires the collection of personal information about the participant then please detail the screening process that will ensure privacy and confidentiality. *please consider the following:*

- request only the minimal amount of information necessary for screening
- Screening should be done in private
- Immediate storage of data to ensure confidentiality

The names of the interviewees will be collected and stored on the consent forms in locked cupboards or filing cabinets and any electronic data containing personal information must be stored securely on SLIIT password protected computers.

C4e. Please confirm that where participants are screened and excluded from participating in the study, the researcher will NOT store screening information and give the screening questionnaire back to the individual

Please type **YES** or **NA** in the box below

YES

C5. Payment, reimbursements of expenses or any other benefit or incentives for taking part in the study. The REC will wish to be reassured that research participants are not being paid for taking risks or that payments are set at a level which would unduly influence participants and “cloud there judgement” about whether or not to participate.

- Research participants should not be substantially out of pocket because of taking part in a research study.
- Payment in cash or kind to participants must only be for costs such as travel expenses, child-care expenses, meals and demonstrable loss of earnings etc.

- Consideration should be given to any expense involved in returning postal questionnaires.
- If it is not possible to reimburse such expenses this should be explained before the research participant is recruited. A clear statement should be included in the participant information sheet setting out the position on reimbursement.
- Payment/compensation for time and effort is a considered a wage payment model – and will only be considered by the REC if the tax implications have been considered by the researchers and communicated to the participants.

C5a. Will any payment or reward, such as an incentive or out of pocket expenses, be made to participants?

Please type YES or NO in the box below

no

C5b. If YES, How much is the payment or what is the reward?

NONE

C5c. Please justify the payment/reward (consider whether this is a fair reimbursement or compensation or likely to coerce or apply undue pressure to participate. Is the payment/reward necessary to achieve a representative sample?)

NONE

C5d. How will the payment/reward be made? (Vouchers are preferable as cash could have tax implications. If using a prize draw, how and when will the winners be notified of results and how and when winners will be notified and results be announced.)

NONE

C5e. Will participants be able withdraw their participation without losing a payment/reward or entered into a prize draw? Please type YES or NO in the box below.

N/A

If NO, please explain why not (consider the principle that participants should be free to withdraw their participation without being penalised)

NONE

SECTION D – CONSENT

For most types of research, it is both a legal and ethical requirement to obtain informed consent from participants able to consent for themselves. The researcher is responsible for obtaining an individual's consent to participate. The participant should be fully informed about their participation (ideally verbally and in writing) and should be free to refuse to participate or withdraw their participation.

D1. Will informed consent be obtained from: (Where applicable, please type YES in the box below)

The research participants?

The research participant's carers or guardians?

Gatekeeper?

(consent for their involvement in identifying/approaching/recruiting participants and/or permissions with regards to access and use of facilities/resources for recruitment and data collection purposes)

Not applicable

☐

D2. Will a signed record of consent be obtained? (Please note that where the study involves the administration of a questionnaire or survey a signed record of consent is not required for completion of the questionnaire as long as it is made clear in the information sheet that completion of the questionnaire is voluntary. Under these circumstances, return of the completed questionnaire is taken as implied consent. Participation in any other interventions within the same study e.g. interviews, focus groups must be supported by obtaining appropriate written consent.)

D2a. Please type **YES, NO, implied consent** or **verbal consent** (*if written consent is not possible and implied consent is not appropriate*) in the box below.

Where the study involves the use of more than one intervention for example interviews and a questionnaire please use the space below to detail the method of consent to be used for each intervention e.g. Questionnaire – implied consent, Interview – written consent, Telephone interview – verbal consent

YES

If implied consent is to be assumed by return of questionnaires, the following statement (or similar) must be included on the questionnaire:

“I have read the information sheet provided and I am happy to participate. I understand that by completing and returning this questionnaire I am consenting to be part of this research study and for my data to be used as described in the information sheet provided” – please include a tick box so that the participant can confirm they have read the statement.

D2b. If you propose NOT to obtain consent in writing (other than for questionnaires), please explain why not. (Where a participant is unable to sign or mark a document to indicate their consent, arrangements should be made for their consent to be witnessed and this should be documented)

PLEASE APPEND COPIES OF ANY PROPOSED CONSENT FORMS TO THIS APPLICATION

D3. All participants must be provided with written information detailing the purpose, procedures, risks and benefits of participating. An approved template for the participant information sheet can be found at <https://www2.ljmu.ac.uk/RGSO/93044.htm>. Please check the box below to confirm that a participant information sheet has been appended to this application.

☐

APPLICATIONS SUBMITTED WITHOUT A PARTICIPANT INFORMATION SHEET WILL NOT BE REVIEWED.

D4. Will participants be able to withhold consent (refuse to take part)?

D4a. Will participants be able to freely withhold consent (refuse to take part)?

Please type **YES** or **NO** in the box below

If **NO** please explain why not

D4b. Will participants be able to freely withdraw from the study whilst it is ongoing?

Please type **YES** or **NO** in the box below

If **NO** please explain why not

D4c. Will participants be able to freely withdraw their identifiable data from the study after data collection has ended? (if there are practical issues related to withdrawing a participants data once it has been amalgamated please explain below)

Please type **YES**, **NO** or **NA** in the box below

YES

If **NO** please explain why not

THE ABILITY OF PARTICIPANTS TO REFUSE TO TAKE PART OR TO WITHDRAW FROM A STUDY MUST BE MADE CLEAR IN THE WRITTEN INFORMATION PROVIDED TO PARTICIPANTS

SECTION E - RISKS AND BENEFITS

Risks – the potential physical or psychological harm, adverse effects, discomfort, distress, intrusion, inconvenience or changes to lifestyle

Benefits – as defined and perceived by the participant rather than the researcher. Benefits are sometimes “hoped-for”

E1. Outline all potential risks to participants which are anticipated to be beyond those experienced in their everyday/normal life, how the risks will be minimised and managed

- Could be physical, psychological, social, economic, legal harm or damage to a person’s self-worth. e.g. side effects, incorrect dosage, injury, dangerous intervention/procedure, untrained volunteers exposed to high levels of physical exertion, participants purposefully exposed to stressful situations, research where participants are persuaded to reveal information which they would not otherwise disclose in the course of everyday life, individual or group interviews/questionnaires discuss any topics or issues that might be sensitive, embarrassing or upsetting, breach of confidentiality, possible misunderstanding etc.

- Whether the risk will involve an increased likelihood or significantly higher risk of such negative events occurring than would be encountered in the participant's everyday life, will depend on the context and a judgement as to the nature of the specific participant(s) and what constitutes their everyday lives.

	Anticipated risks	How minimised (e.g. consider contraindications, checks, training, information to participants, procedures, equipment etc.)	How managed both during and after participation (what if something does happen during and after the study – what will/might you do) (e.g. stop, treatment, equipment availability, training, re-assess, refer, reschedule, carry-on, signpost to support services to help after-participation care of the participants etc.)
1.			
2.			

To include additional interventions place your mouse cursor in the last cell of the final column and press the tab button on your keyboard. A new row will be created for the above table.

E2. Reporting findings to participants

E2a. Is there the potential for the research to reveal findings that might be considered abnormal or significant with regards to the participant's health?

Please type **YES** or **NO** in the box below

NO

If YES, please confirm that the participant will be informed on the participant information sheet that they will be given the option on the consent form to agree, or not agree, for abnormal results to be reported to them.

Please type **YES** in the box below

E2b. What advice/information will be provided to participants when passing findings onto participants- and who will provide the advice/information?

Consider the whether the methods are a proper diagnostic tool, the researcher’s qualifications to diagnose and disclose, whether the participant should consult with an appropriate authority such as their GP etc.

NONE

E3. Explain any potential or hoped for benefits of the study.

- PLEASE BE REALISTIC and do not over-emphasise the potential direct benefits to individual participants. Where there are no direct benefits to individual participants, provide brief details of the potential or hoped for broader benefits of the study for example to society or to future service users.
- Participation might be a positive experience but it is probably best to refrain from claiming any therapeutic benefit simply from participation)

NONE

E4. What are the potential risks for the researchers themselves? (if any)

Consider issues related to working outside of normal hours, off university premises (including a participant’s home), loan working, interacting with participants and members of the public who might pose a threat and potentially dangerous environments.

	Anticipated risks	How minimised	How the risks will be managed should an event occur
1.			
2.			

To include additional interventions place your mouse cursor in the last cell of the final column and press the tab button on your keyboard. A new row will be created for the above table.

E5. For studies that involve transporting participants, will the transport be hired through LJMU Insurance officer?

Please type **YES** or **NO** in the box below

N/A

If NO, please confirm that the LJMU insurance officer has authorised the use of transport that is not hired through LJMU

Please type YES in the box below

N/A

SECTION F – DATA ACCESS AND STORAGE

- **Privacy** – an individual’s control over the extent, timing, and circumstances of sharing oneself (physically, behaviourally, or intellectually) with others.
- **Confidentiality** - the treatment of information that an individual has disclosed in a relationship of trust and with the expectation that it will not be divulged to others without permission in ways that are inconsistent with the understanding of the original disclosure.
- **Anonymity** – where individuals cannot be directly and indirectly identified – this could be related to participation (no way of anyone, including the researcher, knowing that an individual has participated), data/information (no way for anyone, including the researcher, to identify the individual from the data/information collected) and publication (no way for an individual to be identified from data/information that is published).

- **Link-codes** – used to help maintain confidentiality – data is coded so that the data is unidentifiable simply by viewing the coded data but is identifiable when using the record that links the code to the identity of an individual. Data coded in this way is NOT anonymised, is still regarded as personal identifiable data and must be used/stored in accordance with the data protection act.
- **Personal identifiable Data/information** - Data/information that can be identified with a participant through identifiers such as names, link-codes, postal/email addresses, telephone numbers, date of birth, full postcode, medical records, academic records, audio/video recordings of individuals, images, voices etc.. The use of identifiable personal information in research should be reduced so far as possible consistent with achievement of the research aims. The "Caldecott Principles" set out an ethical framework for use of identifiable data:
 - 1) Justify the purpose(s) for obtaining the information.
 - 2) Do not use person-identifiable information unless it is absolutely necessary.
 - 3) Use the minimum necessary person-identifiable information.
 - 4) Access to person-identifiable information should be on a strict need-to-know basis.
 - 5) Everyone with access to person-identifiable information should be aware of his or her responsibilities.
 - 6) Understand and comply with the law.

F1. Personal Data Management.

F1a. Please provide details of any personal, identifiable or sensitive information will be collected and stored (e.g. names, postal/email addresses, telephone numbers, date of birth, full postcode, medical records, academic records, audio/video recordings of individuals, images, voices etc.)

It will be collected through the information sheet.

F1b. How will personal identifiable data/information be COLLECTED/RECORDED to ensure privacy and confidentiality?

- Will data/information be anonymous? Will you use linked-codes/pseudonyms? Will you require codes/pseudonyms to be linked to the identity of the participant?

- How will you ensure that individuals are not identifiable from the codes/pseudonyms?
- Will recording devices be password protected and only accessible to the researchers? Will the data/information be deleted from a recording device once transferred to storage?
- For questionnaires (used for collecting data and screening participants), please explain how the method of submitting/delivering the completed questionnaire to the researcher will ensure confidentiality.

The names of the interviewees will be collected and stored on the consent forms in locked cupboards or filing cabinets and any electronic data containing personal information must be stored securely on SLIIT password protected computers.

Personal data will not be stored on USB drives or other portable media or stored on home or personal computers.

F1c. How will personal identifiable data/information be securely STORED to ensure privacy and confidentiality? (e.g. a locked filing cabinet in an LJM U office, managed client LJM U computers/laptops that require an LJM U username and password to use, an LJM U portal such as the M:drive).

Please note, personal identifiable data/information must not be stored on home or personal computer/laptop or a portable storage device (such as a USB drive)

The names of the interviewees will be collected and stored on the consent forms in locked cupboards or filing cabinets and any electronic data containing personal information must be stored securely on SLIIT password protected computers.

Personal data will not be stored on USB drives or other portable media or stored on home or personal computers.

F1d. How will study findings be DISSEMINATED in order to ensure privacy and confidentiality? (e.g. participants will not be directly attributed to data/information

that is disseminated – or will be attributed but only with explicit consent from the participant, use of pseudonyms etc.)

Data will be destroyed after 5years of PhD completion.

F1e. Following attempts to ensure privacy and confidentiality, if there is the possibility that individuals could be indirectly identified once the study has been DISSEMINATED please explain what you will do (including involving the participant in the decision making process) to minimise the potential for indirect identification, and how you will manage the potential for indirect identification?

- participants with specific characteristics/certain profile or who belong to a specific group might be indirectly identifiable from the things they have said/done that are disseminated by the researcher).
- Care should be taken that the combination of incidental details e.g. details about occupation, location, age and ethnicity, do not lead to individuals being identifiable
- You might want to consult with the participant about how information will be disseminated and what information should not be disseminated.

Questionnaires are more towards the study , but not personal.

F2. Will you share personal, identifiable data with other organisations outside of LJMU or with people outside of your research team? (*e.g. supervisor, co-applicants*)

- Unless there is a good reason, only anonymised data should be shared. Where data has been effectively pseudo-anonymised (can be identified via a linked code) it should only be shared on the basis that the recipient cannot disclose pseudo-anonymised data to third parties and is not permitted to link the data with other data which might render the information more identifiable.

Please type YES or NO in the box below

NO

If YES, please provide further information

Please confirm that personal identifiable data/information will not be transferred out of the EEA without the explicit consent of participants (*include this information on information sheets and consent forms*).

- In general, personal identifiable data should not be transferred outside of the European Economic Area (EEA). This is because other countries do not have the same legal framework or protections for patient data. Even where this is the case, it is difficult to manage and monitor the use of data to ensure it is safeguarded appropriately and is not misused.
- Such information should be handled with great care and only used in the way described in the way described in the participant information sheet.

Please type YES or NA in the box below

NA

F3. For how long will any personal, identifiable data collected during the study be stored?

Data will be stored for 5 years after completion of the PHD in accordance with the requirements.

F4. Limits of confidentiality

F4a. Is it possible that criminal or other disclosures requiring action could take place during the study? (*e.g. during an interview*)

- A range of situations – across disciplinary domains – might prompt consideration of the need to breach confidentiality.
- Although it is generally the case that information resulting from research with human participants should remain confidential between the researcher and participant, there are limits to confidentiality and situations where research brings to light information that may mean that this confidentiality will need to be broken. In such cases, a third party (such as an appropriate/relevant authority or organisation) might need to be informed of the information in question.

Please type **YES**, **NO** or **NA** in the box below

NO

If YES, please state under which circumstances confidentiality might be breached for ethically or legally justifiable reasons. *For example*

- When the researcher knows or suspects that there is serious, immediate or future harm to others with regards money-laundering, crimes covered by the prevention of terrorism legislation or child protection offenses/abuse of vulnerable adults.
- When the researcher knows or suspects that an individual is harming themselves or others or might harm themselves or others in the future.

F4b. If YES, what might you do if you are confronted with the need to breach confidentiality? (e.g., stop the research and consult with relevant individuals/organisations). Please consider that breaching confidentiality will have legal implications.

F4c. Please confirm that it will be clear to the participants (i.e. on the participant information sheet) as to the circumstances and process in which confidentiality may be breached.

Please type **YES** or **NA** in the box below

NA

DECLARATION OF THE PRINCIPAL INVESTIGATOR

- The information in this form is accurate to the best of my knowledge and belief and I take full responsibility for it.
- I undertake to abide by the ethical principles underlying the Declaration of Helsinki and LJMU's REC regulations and guidelines together with the codes of practice laid down by any relevant professional or learned society.
- If the research is approved, I undertake to adhere to the approved study procedures and any conditions set out by the REC in giving its favourable opinion.
- I undertake to seek an ethical opinion from LJMU REC before implementing substantial amendments to the approved study plan. <https://www2.ljmu.ac.uk/RGSO/93205.htm>
- If, in the course of the administering any approved intervention, there are any serious adverse events, I understand that I am responsible for immediately stopping the intervention and alerting LJMU REC. <https://www2.ljmu.ac.uk/RGSO/93130.htm>
- I am aware of my responsibility to comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data.
- I understand that any records/data may be subject to inspection for audit purposes if required in the future.
- I understand that personal data about me as a researcher will be held by the University and this will be managed according to the principals of the Data Protection Act.

- I understand that the information contained in this application, any supporting documentation and all correspondence with LJMU REC relating to the application will be subject to the provisions of the Freedom of Information Act. The information may be disclosed in response to requests made under the Act except where statutory exemptions apply.
- I understand that all conditions apply to my co-applicants and other researchers involved in the study and that it is my responsibility that they abide by them.

Type YES to CONFIRM THAT YOU HAVE READ AND AGREE TO THE DECLARATION ABOVE

YES

SUBMITTING YOUR APPLICATION FOR REVIEW

Once you have completed the ethics application form appended all of the supporting documents and saved as **ONE** pdf document, please submit it electronically to **EITHER** EthicsPR@ljmu.ac.uk (no submission deadline) for proportionate review or to researchethics@ljmu.ac.uk for full review (by the advertised submission deadline).
<https://www2.ljmu.ac.uk/RGSO/93085.htm>

APPLICATIONS MUST BE SUBMITTED VIA AN LJMU EMAIL ACCOUNT AND FOR STUDENT APPLICATIONS SUPPORTED BY AN EMAIL / LETTER FROM THE MAIN SUPERVISOR CONFIRMING THAT THEY HAVE READ AND APPROVED THE STUDY / APPLICATION.

CHECKLIST OF DOCUMENTS SUBMITTED ELECTRONICALLY

(Please note that applications submitted without the required supporting documents will not be reviewed).

	LJMU REC training certificate of completion (Mandatory for students) https://www2.ljmu.ac.uk/RGSO/131507.htm
X	Ethics Application Form (MANDATORY)
	Protocol (MANDATORY) see note below
	Email / letter from supervisor confirming that a) the supervisor has read and reviewed this ethics application form and all supporting documents and b) the information included in the application and all supporting documents will allow UREC to decide whether all challenges to the principles of research ethics have been identified and addressed
	Copies of any recruitment/advertisement material e.g. letters, emails, posters etc.
	Participant Information Sheet https://www2.ljmu.ac.uk/RGSO/93044.htm
	Carer Information Sheet https://www2.ljmu.ac.uk/RGSO/93044.htm
	Gatekeeper Information Sheet https://www2.ljmu.ac.uk/RGSO/93044.htm
	Participant Consent Form https://www2.ljmu.ac.uk/RGSO/93044.htm
	Carer Consent Form https://www2.ljmu.ac.uk/RGSO/93044.htm
	Gatekeeper Consent Form https://www2.ljmu.ac.uk/RGSO/93044.htm
	Non-validated questionnaires

	List of interview questions
	Risk Assessment Form https://www2.ljmu.ac.uk/RGSO/93044.htm
	Other please specify

Note

A research protocol is a document describing in detail how a research study is to be conducted in practice, including a brief introduction or background to the study, the proposed methodology and a plan for analysing the results. For the purposes of your application for ethical approval, it is something that can be presented in a variety of formats dependent on its origin for example:

- for postgraduate research students it may be the programme of work embedded within their programme registration form (RD9R)
- for studies which have obtained external funding it is often the description of what they propose doing which they submitted to the funder
- for other students it is the study proposal they have written and had assessed/approved by their supervisor.

Research protocol

RESEARCH PROTOCOL (taken from RD9R)

Date	Activity
	Phase 1: Preliminary work
2017	
November	Enrolment
2018	
Feb	Formulation of main aims, establish specific objectives
March- May	Review on ADR methods used and complementary literature
May	Compilation and submission of RD9R including research proposal
June	Research Committee consideration of RD9R
June	Submit for ethical approval
	Phase 2: MPhil
July - Nov	Review on ADR methods and processes in Sri Lankan construction industry and Study on relevant case studies
Dec – Jan 2019	Analysis of Data
2019	
Feb	Design interview questions
March - May	Undertake interviews with 8 professionals who directly involve in ADR process and 10 construction industry professionals
June-July	Analysis of Data

Aug-Nov	Write up transfer report, format, binding, review with supervisor
Dec -2019	Submission of transfer report
2020	
	Phase 3: PhD work
Jan	Review and revision as necessary of main aims and specific objectives
Feb-April	Review of additional Literature
May	Develop Pilot questionnaire
June	Online surveys to 500 industry professionals who are directly and indirectly involve in ADR process
July - Aug	Analysis of Data
Sept - Oct	Design interview questions and undertake supplementary interviews with further 6 professional who directly involved in ADR
2021	
Nov	Analysis data from interviews
Dec – Jan 2021	Develop Framework
2021	
Feb - March	Validate with focus groups
	Phase 4: Thesis write up
April - Aug	Write up, format, binding, review with supervisor
Sept	Thesis submission & Viva



Title of Study OPTIMIZATION OF COST INCURRED IN ADR PRACTICES IN THE SRI LANKAN CONSTRUCTION INDUSTRY

School/Faculty: Faculty of Engineering and Technology

Name and Contact Details and status of the Principal Investigator:

Candidate: Edirisinghe

Department of Quantity Surveying

Faculty of Engineering

SLIIT Campus- Malabe

Tel: +94 712832167

Name and Contact Details of the Investigators *[including supervisors]*:

[Insert an introductory paragraph e.g.:]

You are being invited to take part in a research study. Before you decide it is important for you to understand why the study is being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

1. What is the purpose of the study?

It is inevitable to avoid generating disputes in the construction industry due to its complexity. The dispute resolution methods used in the Sri Lankan construction industry are litigation, arbitration and alternative dispute resolution methods; Adjudication, mediation and conciliation. Parties in the disputes much prefer to go for ADR methods due to less time, less cost and flexibility. Since ADR process is much popular among the industry professionals it is advisable in finding ways to optimize the cost incurred during the process.

This study is about understanding the variables in cost and develop a frame work to optimize the coat of ADR process.

2. Why have I been invited to participate?

You have been invited because you are working in the construction industry for a considerable time period and have involved in dispute resolution processes.

3. Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form – if applicable. You can withdraw at any time by informing the investigators without giving a reason and without it affecting your rights/any future treatment/service you receive.

4. What will happen to me if I take part?

If you agree to take part in the interview you will be asked to sign a consent form. Afterwards you will be interviewed by the researcher for no longer than an hour. The interview will be audio recorded and afterwards typed written.

The findings of the interviews will be essential for the discussion and answer of the above-mentioned research in the framework of a PHD dissertation.

All of the data will be treated with anonymity and confidentiality.

5. Will I be recorded and how will the recorded media be used?

The audio and/or video recordings of your activities made during this study will be used only for analysis and for illustration in conference presentations and lectures. No other use will be made of them without your written permission, and no one outside the project will be allowed access to the original recordings.

Interviews will be audio recorded on a password protected audio recording device and as soon as possible the recording will be transferred to secure storage and deleted from the recording device.

6. What are the possible disadvantages and risks of taking part?

There are no risks for the participants of the survey.

7. What are the possible benefits of taking part?

The participants will have the benefit to obtain the results of the research after completion

8. What will happen to the data provided and how will my taking part in this project be kept confidential?

You will be asked to sign a consent form. Transcripts from the interviews will be coded and made anonymous. The publication of direct quotes from the interviews will not be attributed to named individuals and their identities will be protected.

Therefore, your participation will be kept strictly confidential and it will not be possible to identify any individual in future reports or publications.

The information you provide as part of the study is the **research study data**. Any research study data from which you can be identified is known as **personal data**.

Personal data does not include data that cannot be identified to an individual (e.g. data collected anonymously or where identifiers have been removed).

If necessary, personal data will be stored confidentially for 5 years after the study has finished. Personal data will be accessible to *the research team and how appropriate or suitable safeguards will be achieved*.

Personal data collected from you will be recorded using a linked code – the link from the code to your identity will be stored securely and separately from the coded data

We will not tell anyone that you have taken part in the focus group, although there is of course a possibility that another member of the group might recognise you. We will also not name you in any of our reports or publications. In addition, all participants in the focus group will be asked to respect the confidentiality of their fellow participants.

You will not be identifiable in any ensuing reports or publications.

We will use pseudonyms in transcripts and reports to help protect the identity of individuals and organisations unless you tell us that you would like to be attributed to information/direct quotes etc.

The interview recordings will be sent to an independent company who will produce a transcript

Anonymised data might be used for additional or subsequent research studies and we might share anonymised data with other investigators (e.g. in online databases). All

personal information that could identify you will be removed or changed before information is shared with other researchers or results are made public.

9. Limits to confidentiality

Please note that confidentiality may not be guaranteed; for example, due to the limited size of the participant sample, the position of the participant or information included in reports, participants might be indirectly identifiable in transcripts and reports. The investigator will work with the participant in an attempt to minimise and manage the potential for indirect identification of participants.

10. Use of Deception

Research study designs often require that the full intent of the study not be explained prior to participation. Although we have described the general nature of the tasks that you will be asked to perform, the full intent of the study will not be explained to you until after the completion of the study (at which point you may withdraw your data from the study).

11. What will happen to the results of the research project?

The investigator intends to complete a dissertation to satisfy their degree programme, publish the results in a PhD thesis and journal article

12. Who is organising and commissioning the study?

This study is organised by Liverpool John Moores University.

13. Who has reviewed this study?

This study has been reviewed by, and received ethics clearance through, the Liverpool John Moores University Research Ethics Committee (Reference number: xxx).

14. What if something goes wrong?

If you have a concern about any aspect of this study, please contact the relevant investigator who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how they intend to deal with it. If you wish to make a complaint, please contact the chair of the Liverpool John Moores University Research Ethics Committee (researchethics@ljmu.ac.uk) and your communication will be re-directed to an independent person as appropriate.

15. Data Protection Notice

The data controller for this study will be Liverpool John Moores University (LJMU). The LJMU Data Protection Office provides oversight of LJMU activities involving the processing of personal data, and can be contacted at secretariat@ljmu.ac.uk. This means that we are responsible for looking after your information and using it properly. LJMU's Data Protection Officer can also be contacted at secretariat@ljmu.ac.uk. The University will process your personal data for the purpose of research. Research is a task that we perform in the public interest.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained.

You can find out more about how we use your information by contacting secretariat@ljmu.ac.uk.

If you are concerned about how your personal data is being processed, please contact LJMU in the first instance at secretariat@ljmu.ac.uk. If you remain unsatisfied, you may wish to contact the Information Commissioner's Office (ICO). Contact details, and details of data subject rights, are available on the ICO website at: <https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/>

16. Contact for further information

Candidate Edirisinghe

Department of Quantity Surveying

Faculty of Engineering

SLIIT Campus – Malabe, +94 712832167

Thank you for reading this information sheet and for considering to take part in this study.

Note: A copy of the participant information sheet should be retained by the participant with a copy of the signed consent form.

Interview consent form



Insert Title of Project OPTIMIZATION OF COST INCURRED IN ADR PRACTICES IN THE SRI LANKAN CONSTRUCTION INDUSTRY

CandidateEdirisinghe, Department of Quantity Surveying, Faculty of Engineering, SLIIT-campus

1. I confirm that I have read and understand the information provided for the
above study. I have had the opportunity to consider the information, ask questions
and have had these answered satisfactorily

☐

2. I understand that my participation is voluntary and that I am free to withdraw
at any time, without giving a reason and that this will not affect my legal rights.

☐

3. I understand that any personal information collected during the study will be
anonymised and remain confidential

☐

4. I agree to take part in the above study (if appropriate please specify the type
of study or particular intervention you are seeking consent for – eg focus
group, interview, training programme)

☐

For studies involving the use of audio / video recording of interviews, focus groups etc or
where there is a possibility that verbatim quotes from participants may be used in future
publications or presentations please include the following:

5. I understand that the interview/focus group will be audio / video recorded
and I am happy to proceed

☐

6. I understand that parts of our conversation may be used verbatim in future
publications or presentations but that such quotes will be anonymised.

☐

Name of Participant

Date

Signature

Name of Researcher

Date

Signature

Name of Person taking consent
(if different from researcher)

Date

Signature

Note: When completed 1 copy for participant and 1 copy for researcher

Appendix 2

Examples of the individual interview questions, sample transcript and questionnaire

Background:

Introduction to factors affecting to construction industry disputes

Available dispute resolution methods in Sri Lanka

Advantages and disadvantages of litigation, arbitration and alternative dispute resolution methods

Alternative dispute resolution process

Factors affecting to the cost of the ADR process

My Research is proposing to develop a conceptual framework to optimize the cost incurred in ADR methods in Sri Lankan construction industry.

Questions

1. What is your job title, what are your main duties / areas of responsibility and how long have you been in this role?
2. What kind of projects are you usually involved in? Private or public? What sectors and typical contract values?

3. What would you describe as the factors effecting to construction disputes?
4. Has your organisation participate in any construction dispute?
5. What are the dispute resolution methods used in your organization?
6. what is the current situation of those disputes?
7. How many disputes you have been involved with? What is the present situation of those?
8. What is the most common dispute resolution method that industry like to adopt?
9. Do you think ADR is more popular than the litigation and arbitration? If so please explain.
10. What are the reasons for selecting ADR methods as dispute resolution method in construction industry?
11. What are the factors affecting for the cost of the ADR methods?
12. Do you think the cost generated during the ADR process is reasonable? If so please explain.
13. Can you think of a way to optimize the cost of ADR process?
14. What are the benefits in optimizing the cost of ADR process?

Sample interview transcript

TITLE

Interviewee	Voice 06
Interviewer	CandidateEdirisinghe
Date	
Venue	

CANDIDATE: Hello it's me.

INTERVIEWEE: Hello Candidate , How are you.

CANDIDATE: I am fine thank you. How are you these days? I heard from Thara that you are busy with a Dispute Adjudication Board.

INTERVIEWEE: Yes, Candidate. I hope it will be end with in this month.

CANDIDATE: Oh , that's brilliant. Right, did you get the email that I sent this morning?

INTERVIEWEE: I did and I've bounced back the consent form to say that it was pretty much late in the day but it should be with you when you get back to your desk

CANDIDATE: yeah no, there's no problem. Basically I'm the programme leader of the Quantity Surveying programme offered by LJM U , at SLIIT Campus – Malabe.

INTERVIEWEE: uh huh

CANDIDATE: and what I am trying to do is to understand the factors affecting to the cost of the ADR methods use in the construction industry and how to optimize it. What I believe is if we can make a conceptual frame work for that ADR will be more popular and parties will take much effort to resolve the disputes as soon as possible and try to complete the project. Obviously you seem to be involved in these since you are working as an arbitrator/adjudicator in the industry.

INTERVIEWEE: right

CANDIDATE: so that's a small brief of my research.

INTERVIEWEE: so you'll get quite a lot of interesting information from that as well

CANDIDATE: yeah well hopefully because you know there's a variety of sources

INTERVIEWEE: Umm

CANDIDATE: since you are steering ADR, what can be the main case for disputes in the construction industry in Sri Lanka?

INTERVIEWEE: As you know there are different professionals working in a construction site. Though they need to achieve one goal they have targets within them. Once they try to achieve their individual targets there can be mismatches in interests and it will lead to conflicts in the site. Most of the time conflicts are not handle properly and it will end up as a dispute which need to be solved using available dispute resolution methods.

This is a general idea Candidate. But there are identified factors for disputes in construction industry. They are client generated, consultant generated and contractor

generated factors. In client generated issues are variations initiated by the client, change of scope, late giving of possession, acceleration, unrealistic expectations and payment delays can be take. Most of the clients don't have knowledge in constructions. Once the construction started only they will actually understand the space given to each area. Also some clients whenever they see something new they wants to apply that to their building , so they try to change the drawing and it will effect for the budget and the construction period.

Late giving possession to start up work can be seen most of government constructions. They take time to get the approval from government authorities to start up with the work.

Most of the government sector client are coming with unrealistic expectations like completion dates. Due to some political issues, like some Politians want to finish the project before the next election. It will affect the quality of the project. The bad thing about our clients are delay in payment. Though they get the work done but paying the bills take much time. This happens mainly in public sector constructions since they need to get the approval for the payment from various authorities.

OoohCandidate, can you please give me 5 minitues I need to sign this document.

CANDIDATE: Oh. Sure.

INTERVIEWEE: ok, back to your discussion. I think I need to elaborate on contractor generated disputes.

CANDIDATE: oh yes.

INTERVIEWEE: The contractor generated disputes are delays in work progress, time extensions, financial failure of the contractor, technical inadequacy of the contractor, tendering and quality of works.

Most of the disputes arise because of the technical inadequacy of the contractor which led to the quality of work. Some contractors take jobs because of their greediness. They don't consider whether they have the expert knowledge on doing it. Not only the quality but also the time for the construction and sometime it will double the work. And when it comes to payment it will be much difficult to pay. And it will lead to payment delay and some other issues as well.

Also few contractors don't contribute financially to the constructions therefore they wait until they get payments for the work done and it will create unnecessary delay and even to the quality of the project. In Sri Lanka we exactly know the time periods which we cannot get our labour force due to religious festivals and rainfall. Therefore it is important for our contractors to plan their work accordingly and meeting the given time programme without requesting for time extension. But mostly contractors request time extensions for the same reasons, because of not having proper planning.

Shall we have a cup of tea Candidate.

CANDIDATE: Oh thank you very much.

INTERVIEWEE: We can continue while we are having the tea.

The next factor is consultant generated disputes. Design errors, inadequate / incomplete specifications, quality of design, and availability of information.

Common issues are design errors and not providing required drawings and specifications on time. This will generate unnecessary delays in construction. Design errors will affect the budget of the project as well. Since not having enough time to do designs there will be issues in the quality of the design as well. And most of the designs are lack of informations. Those are the factors affecting to construction disputes in Sri Lanka. And those are the cases I have handled so far.

Things which I have discussed with you are common factors in disputes in Sri Lanka. As you can see some we can mitigate if the parties to contract have interest on that.

CANDIDATE: yes that's right. Well that concludes the questions.

INTERVIEWEE: ok

CANDIDATE: that was absolutely fantastic. What I'll do is I'll follow this up with an email and just confirming that obviously that it is anonymous. And then you've got my email address again to return them to. And if I can just make a request to the email for perhaps an appointment in person you know Novemeber, December whenever you are free.

Appendix 3 – Interview Transcripts

Interviwe Trascript

1.	What is your job tile?	Claims consultant and advisor on dispute resolution, Senior QS
	How long have you worked in the construction industry?	26
2	How would you best describe your type of organization?	Consultancy
3.	What kind of projects are you usually involved in?	
	Private or Public?	Yes
	International or local?	Yes
	What sectors?	Civil engineering
	Type of contract?	All
	Contract values?	Cannot tell an exact answer
4.	What types of risks in your experience result in claims?	1.Underquoting 2. Ignorance of risks of contractor 3. incompetency of the contractor and consultant 4. Ignorance of the provisions of the contract.
5.	How many of the claims you have worked on end up in disputes?	Cannot tell an exact answer
6.	In your opinion what are the 3 most common causes of disputes?	1.Extension of time 2.Termination 3.Quantification related matters
7	What methods do you use to resolve disputes?	Conciliation, more adjudication, arbitration, mediation, less negotiation
8.	In your opinion which dispute resolution method best suits the resolution of disputes for your organization?	Conciliation (Flexible, low cost and parties like most)
9	Can you identify the type of costs associated with disputes?	<p>Mediation and conciliation – less than 200 thousand</p> <p>Adjudication fee – Adjudicators fee Center chargers Clerical fee Expert witness fee Consultant fee</p> <p>Arbitration fee – Arbitrators fee</p> <p>Center chargers Clerical fee Expert witness fee Consultant fee</p> <pre> graph LR A[Adjudication fee -- Adjudicators fee Center chargers Clerical fee Expert witness fee Consultant fee] --> B[Retaine] A --> C[Daily] A --> D[Travel cost and] E[Arbitration fee -- Arbitrators fee] --> F[Retainer fee] E --> G[Daily fee] E --> H[Travel cost and expenses] </pre>

		<p>When the ADR process going on without terminating the project, the project professionals have to involve in the ADR process without looking after project. That is an indirect cost for the project which is an unproductive cost of the project.</p> <p>Human behavior will come during the post contract stage. Technical related defaults will arise during the pre-contract and post contract stage.</p>
10	<p>Can you roughly identify the cost of dispute resolution as a percentage of the dispute itself? That is, if you are disputing £100000 and the cost is £10000, and then is it 10%?</p>	<p>Yes</p> <p>Example: if the dispute amount is 10million,</p> <p>Conciliation – 200 – 300 thousand</p> <p>Mediation - 400 thousand</p> <p>Adjudication – 900 thousand</p> <p>Arbitration – 2 million</p> <ul style="list-style-type: none"> • Generally, conciliation and mediation is not mentioned in the contract documents as a mode of dispute resolution. But adjudication and arbitration is mentioned there. • Even after the adjudication and arbitration parties need to amicably settle the issue resolved by both the methods.

11.) Can you rank the following sources of dispute, which in your opinion is most likely to result in a dispute?

Source of dispute	Ranking of source of dispute	Examples of the cause of dispute	
Owner related (These dispute sources arise once parties signed the document)	2	variations initiated by the owner	If the variations didn't handle properly by the consultant and contractor it can lead to dispute. Most of contracts 10% of contract sum is allocated for variations.
	2	Change of scope	Part of this is a variation
	3	late giving of possession	This is about the ownership. For some constructions parts of the sites will give for the construction and other part will be given later.
	3	acceleration	Cannot ask to speed up the work and finish before the given time
		unrealistic expectations	
	1	payment delays	Can claim interest
	4	Confusing requirements of owner	What exactly owner needs to get done. Deciding the requirement clearly
		supremacy of owner	This need to come under human related
		project scope definition not clear	
	3	site access delays	This is about the road to go to site. This also can be put under "late giving of possession".
		owner furnished equipment	Need to rephrase as " Owner furnished materials and plant".
		lack of space in construction site	This is not a usual case. But as an example if the owner put some containers inside the site while the construction is going on this issue can arise.
		financial failure of owner	
	4	Owner desire to reduce capital costs	Owner desire to reduce capital costs or make savings.
		Non-payment of changers	Can put under "change of scope".
		Suspension of work	Initiated by the engineer during the construction
Are there any owner related causes that you think should be added to this list?	5	Changers to engineer payment certificate	
	2	Delays in work progress	

Contractor related	2	time extensions	"Failure to apply for time extensions".
	3	financial failure of the contractor	
	1	technical inadequacy of the contractor	
		tendering	Low quoting or under quoting.
	2	quality of works	
	4	excessive change orders	"Inappropriate claims".
		Major defects in maintenance	"Failures in maintenance". Defects notification period.
		Local people interruptions/protests	Not applicable under this.
	3	sub-contractor inefficiency	
	3	Non-payment to subcontractor	
		Mentality of contractor	Continuous claims. Can categorize under "human behavior".
	3	Underestimation by contractors	"Tendering"
		Unit Prices	"Tendering"
	2	Inadequate planning	
Is there any contractor related causes that you think should be added to this list?	2	Inadequate record keeping	
	1	Poor contract administration	
	3	Failure to clarify bid information	
Design related	1	Design errors	Structural design failures
	3	inadequate/incomplete specifications	
	3	quality of design	
	3	availability of information	
	2	Design changers	Upgrading design based on the scope change
Are there any design related causes that you think should be added to this list?			
Contract related	2	ambiguities in contract documents	} Both are same
	2	different interpretations of the contract provisions	
	3	risk allocation	
		other contractual problems	Not applicable
		change order negotiations	Not applicable
		Interpretation of escalation/de-escalation	
		Form of contract	
		Inadequate bid information	

		Scope of the contract	
		Multiple prime contracting parties	Both need to categorize under contract administration
		Cost overrun	
Are there any contract related causes that you think should be added to this list?	1	Poor/inadequate contract documentation	
Human behavior related		adversarial/controversial culture	
		lack of communication	Lack or poor communication
	2	lack of team spirit	
		Unfair behavior	
	1	Effects of psychological degenes Misunderstandings among participants	
Are there any Human behavior related causes that you think should be added to this list?	3	Lack of knowledge	
	3	Attitudes of the contractor	
Project related	1	site conditions	This is unexpected site conditions
	3	unforeseen changes	
	2	Complexity	Coordination, contract administration, construction itself can be complex
Are there any project related causes that you think should be added to this list	Physical related things in the site will come under this		
		Environmental hazards	
External factors	1	weather	
	2	legal and economic factors	
	4	fragmented structure of the sector	Complexity of the industry. Example there are different stakeholders, suppliers, transporters.....etc.
	2	Change in government codes	procedures or rules

Both can put under one category

	4	Labour disputes/union strikes	
	4	market inflation	Construction demand
	4	public disorder	Social factors, unstable political environment
	4	Third party delays	Local authorities
	3	Act of God	Natural disasters
Are there any external related causes that you think should be added to this list			
Consultant related		Errors and omissions in design	Must go under " Design"
	2	Excessive extra work	Caused by initial design
		Differing site condition	Must go under " project"
		specification related	Must go under " contract"
	2	Defective design	
		Excessive quantity variations	Not applicable
	4	Lack of knowledge	Lack of supervision, less knowledge in dispute resolution methods
		Delay in Drawings	Lack of information
Are there any consultant related causes that you think should be added to this list?	1	Poor documentation	
	1	Poor contract administration	Delay in drawings/ information and delay in approvals.
	5	Suspension of work	
	3	Lapses in certification	
	3	Failures in determination	
other		issue of security of construction site	Already discussed in above categories.
		Accident/safety	
		necessity of environment improvement	
		Environmental hazards	
		Excessive correspondence	
		Inadequate administration of project participants	
		Material testing technique	
		Difference in construction technique	
		Acceleration or suspension of work	
		Negligence or negative attitudes of project participants	

		Insufficient room to stage subcontractors and materials	
		Unstable political environment	
Are there any other related causes that you think should be added to this list?			

Candidate: What is your job title?

Interviewee: I am a claim consultant, Adjudicator and Arbitration consultant

Candidate: Ok. How long have you worked in the construction industry?

Interviewee: 20 years

Candidate: How would you best describe your type of organization?

Interviewee: I am a freelancer

Candidate: What kind of projects are you usually involved in?

Interviewee: All kind of projects. I have involved private, public projects. International also I have involved but not that much. 98% I can say local projects.

Candidate: What sectors? I mean

Interviewee: All sectors. Both the private and public clients are coming for my service.

Candidate: Type of contracts? Design and built, traditional, SBD 01, 02or?

Interviewee: Most of the time SBD 02, and SBD 01 also I have used. SDB 04 design and built type. Then FIDIC 04th edition. Then FIDIC 2006, 2010 and other ad hoc contracts.

Candidate: What about the contract values generally? Range if possible?

Interviewee: 28 Million – 1300 Million

Candidate: What are the dispute resolution methods in Sri Lankan construction Industry? Sir have identified the causes of disputes previously. These are the causes of disputes which I have identified. In my research I am going to identify what are the ADR methods which practicing in Sri Lanka. And what kind of the procedure that we have to follow when using ADR. And also identifying what are legal documents for that procedure.

Interviewee: What is your objective?

Candidate: Here sir, when consider a cause of dispute, I am trying to find out what is most suitable type of method to solve the dispute. Here we cannot generalize. It's depend on the situation. But let's say there is a problem in risk allocation or there is ambiguities in contract document. In that case sometimes we cannot resolve that particular case by negotiating. Sometimes we will have to get an arbitrator or adjudicator to resolve the problem. Like that you feel like this type of method is most suitable. We should follow the contract document obviously. But other than that if you feel like this method is most suitable for resolve the problem. In here I am trying to find out what is the most popular dispute resolution method. We have negotiation, conciliation, mediation, adjudication, arbitration then the court procedure. By looking at the answers which you will give, I find the most suitable and best way to resolve dispute. It can be negotiation or adjudication or other method. In that method I am trying to find what are the ways to improve that method. That is the path of my research. After finding most popular method, most popular method mean let's say 51% popular method. The improvement will be done to that particular method. Then we will move on to the questionnaire, what are the dispute methods in construction industry?

Interviewee: Most commonly used one is negotiation. Conciliation very rarely used. Mediation is used lesser than the conciliation. Adjudication is most commonly used method, and it is the one which specified in the contract. Then what is not settle in the adjudication, then move on to the arbitration. In arbitrations, when the parties are not satisfy with the arbitrator's decision, sometimes they used to refer dispute to the courts. But that is not to resolve dispute from the beginning but to either sector side or enforce it where the parties have not complied with the arbitral award.

Candidate: What are the most popular dispute resolution methods in Sri Lankan construction industry?

Interviewee: 'Popular' can be define as the what is most commonly used method or, what is the method which people like to use. Most commonly used method is adjudication in Sri Lanka. By default now a days in the contract, as first step people have to the adjudication. Formally as first step people used adjudication. It may be a reason for adjudication as most commonly used method. Popular in the sense the method which people like to used right? So sometimes people may not like to for the adjudication because of the inbuilt procedures.

That unlikeness may be there in the arbitration. But most commonly used method is construction industry in Sri Lanka is adjudication.

Candidate: Negation is not the most common method, isn't it sir? We can say that here is negotiation that's why people are not coming to you for your service.

Interviewee: Yes. It can be. If there is negation, so there is no report with anyone. That between the parties. There is no report or note on that dispute. That is limited only the parties. But normally, the possibility to resolve disputes by using negotiating is very low. If there is complex dispute negotiation will not be useful.

Candidate: Then, Why do you believe these are popular?

Interviewee: By default method is adjudication in the contract. So that is most commonly used one.

Candidate: Describe the procedures of most popular dispute resolution methods and why are these procedures adopted? Is it dictated by the form of contract?

Interviewee: You can better to use the word 'commonly' after the word popular. Because popular means what is the thing people like. In here whether the people like or not they have to go for the arbitration. Since adjudication there in the contract, they have any other choice other than the adjudication. Parties can go for mediation or conciliation with the each party's agreement. That's why the contract is not specifying those methods. If the contract is specifying those methods in the contract, it will like adjudication or arbitration. So the parties are compel to compulsorily follow that. Once I experience a mediation process, there was mediation as default in the contract. There was a dispute between parties, they directly go for the mediation. I was the mediator. So parties did not come for the solution, then they had to the adjudication. Then one party did not agree to the adjudication decision, then they went to arbitration. In the arbitration procedure, the adjudication decision was approved. That also the party who liable to pay did not comply. Now it is at the courts. They have gone through 4 procedures. Mediation, adjudication, arbitration and court procedure. Now it is in courts to enforce arbitral award. When specifying the methods, procedures may be lengthy. If that procures are not specifying in the contract, if the parties want to go for conciliation or mediation then they can.

Candidate: Describe the procedures of most popular dispute resolution method? We will take the procedure of the adjudication? Is there any time line in adjudication? According to the SBD

Interviewee: Yes time line is there in adjudication. First one party should give 7 days' notice for adjudication. Then parties will have to appoint an adjudicator, if it is not jointly appointed, they will have to request to ICTAD, CIDA to appoint an adjudicator. After appointing the adjudicator and once the adjudicating procedure starts, 28 days after receiving of first statement of claim adjudicator should have to give the adjudication decision. 28 days in SDB 02, but in FIDIC 1999 there is 84 days for that.

Candidate: Is FIDIC also same as SDB 02, after appointing the adjudicator 84 days right?

Interviewee: Yes. 84 days same procedure. In the procedure of the adjudication commonly used procedure is within that 28 days or 84 days is that 28 days starts with the submission of the referral statement of claim. And the other party, is given chance to statement of defense or a response. Then there is one called reply statement given by the claiming party. If the adjudicator has some quarries he raises that. So that he conduct another hearing. After getting explanation for adjudicator's quarries, he delivers the decision. So that is the procedure commonly used in Sri Lanka in adjudication.

Candidate: Sir, is anywhere that this procedure is written? I mean adjudication procedure.

Interviewee: No. But in the practice we follow this procedure. In some extent adjudication previous setup is similar as the arbitration court procedure. Because there are 3 statements, statement of claim, statement of defense, reply statement. Arbitration and court procedure will go beyond these 3 steps or documents. This is the followed procedure in adjudication, arbitration and court procedure.

Candidate: is this a procedure which copied from the court?

Interviewee: Yeah it could be. Because they say court procedure and arbitration procedure is adversarial. Adjudication is inquisitorial. In arbitration or court proceedings the judge cannot give the decision with his experience. He depends on the evidences. But in adjudication, adjudicator can give his judgment with the personal knowledge or experience. But he gives different decision based on his personal knowledge, outside the information provided by the parties he should show his view to the parties.

Candidate: Is the adjudicator must tell that he is going to take these type of decision?

Interviewee: Not a decision. His point of view. If there is difference between parties' view then he has to show his view according to his personal knowledge. Because his view may be wrong. So that he has to show his point of view. But in the practice some adjudicators don't show their point of view to the parties.

Candidate: So, what about the arbitration?

Interviewee: In arbitration, if the arbitrator has different point of view other than the party's point of view, so the arbitrator should give a chance to parties to cross examine. So that the meaning of arbitrator's point will be clearly define to the parties.

Candidate: Sir, can you please tell me that 3 documents again?

Interviewee: Statement of claim, Statement of defense, Reply statement

Candidate: Ok. Then, Can you identify the major cost component in each procedures? Let's say negotiation there is no cost, isn't it?

Interviewee: We can say there is cost in negation, apart from the time of the parties who negotiate the dispute.

Candidate: Ok. Then what about mediation?

Interviewee: There is a cost. We have to pay for the mediator. Perhaps we have to pay for the where the place that the process is conducted.

Candidate: Then what about conciliation?

Interviewee: Yes, there is cost. You have to pay for the conciliator. And conciliation cost may be lesser than the mediation. Because in mediation, you will have one or two sets of formal or informal meetings. In conciliation, number of meetings are kept to a minimum.

Candidate: In both methods there is award, isn't it sir?

Interviewee: In mediation there is not. Mediator persuades parties to a settlement. In conciliation, the conciliator gives a report.

Candidate: Is there any record in mediation? Is there any record of meeting minutes?

Interviewee: Yes, there may be meeting minutes in mediation. When the parties come to an agreement, at that time parties will record that agreement in writing. Or otherwise suppose the parties could not come a settlement, then the mediator gives a report stating that he could not come to an agreement.

Candidate: We will say there is procedure in the document, stating that mediation, conciliation and then arbitration? So, how the arbitrator knows that there was mediation and conciliation procures were conducted?

Interviewee: If mediation was successful, it won't go to the next step. Otherwise mediator will issue a non-settlement or statement stating that he could not conclude that mediation.

Candidate: Ok. Does conciliator give that type of statement?

Interviewee: Conciliator gives only the report. It is up to the parties, whether agree to the report or not. The documents which I have given, can you imagine what type of dispute resolution method I have adopted.

Candidate: Conciliation. Isn't it?

Interviewee: Yes, they all are conciliation. One or two are adjudication. Majority are conciliation.

Candidate: Now only I can read and understand that sir. Referring literatures are important to get an idea to refer a case. Otherwise it won't be able to understand.

Interviewee: Ok. Right

Candidate: Even though we know the theories, when referring literatures it will be really helpful to understand the case.

Interviewee: Ok. Right.

Candidate: Then, Can you suggestions how these costs can be reduced? We said there zero cost in negotiation. What about the mediation?

Interviewee: In mediation, parties can use private place to conduct the meetings. May be party's place or private place. It can reduce the cost.

Candidate: Sir, do you feel that there should be a change in procedure?

Interviewee: In mediation, there are 4 types. It can be differ according to the type of mediation. Facilitative mediation, evaluative mediation, settlement mediation, transformative mediation. In facilitative method, mediator does not do anything, he only facilitates the procedure. In evaluative method, mediator evaluates legal background of the case. In settlement method, mediator helps to bargain the parties. Mediator tries to settle the dispute fairly. In that case cost may be less. In evaluative method cost may be high because, mediator will have to do work on the dispute. Mediator has to do certain

academic work on the dispute. Mediator gives evaluation, not the decision. He evaluates pluses and minuses of the positions of parties. It will take some time. Because of that mediator's fee will be increased. Facilitative mediation is conducted relatively less. Because the mediator has to provide facilities to the parties. This type of mediation is used when somehow rather parties want to come to the settlement. But there is no other way, this type of mediation will be ideal. He just meet the parties, and he allows to parties to settle their dispute themselves. He just only give little stimulation. In evaluative mediation there is two parties who has different point of views, then the mediator evaluates. After that parties will understand their position and come to a settlement. It may be costly than other mediation methods. Settlement mediation is least cost method. Transformative mediation is not that much of used in the construction. In transformative method, two parties appreciate the values of each other. If it so, there is not dispute, right?

Candidate: Yeah.

Interviewee: In here we can say settlement mediation is least cost method.

Candidate: Can for any type of dispute, settlement mediation be used?

Interviewee: That's the problem. I think if the dispute of parties merely about figure, let's say if I was damaged and I think this much of amount I should claim. And the other party says that yes there is a damage but not that much. So, the parties are in a position, yes there is a damage so one party has to pay. But the problem is on amount. Then the mediator can stimulate easily for the settlement by bargaining, step by step they will go the settlement. The cost is less. But I must say mediation is not that much of used in Sri Lanka.

Candidate: Sir, then what about the cost in conciliation?

Interviewee: Conciliation is informal procedure. Parties go the conciliator, and they settle their dispute in a very informal way. The thing is conciliator gives a report. That's what I have mention earlier.

Candidate: Sir, how the cost will reduce in conciliation?

Interviewee: Normally in conciliation cost is depend on conciliator's fee and report preparation fee. It depends on the person. You have to find reasonable person who can understand your problem is better. For example the cost of mediation process that I conducted will be different from mediation which conducted by my senior mediator. That

will be differ. If the parties feel like that mediator is not suitable, they free to go for another mediator.

Candidate: Do we can claim from the mediator?

Interviewee: No, can't. If there is negligence of mediator, parties cannot claim, unless you prove a fraud.

Candidate: Sir, then what about the cost of adjudication?

Interviewee: There is two way that you can appoint an adjudicator. First one is agreement of the both parties and the second one is institution will be appoint an adjudicator. Adjudicator comes with the some sort of formalities. Adjudicator gets a fee based on his time. Nowadays an adjudicator will be paid Rs 50,000 – 70,000 per day. Per day means if there is two hour meeting also he will charge that much of amount. By looking and the nature and complexity of the dispute, adjudicator will decide number of days to resolve the dispute, including the number of meetings. You can reduce the amount of money, if you can go for the sole adjudicator. There is 3 panel of adjudicators are there. You have to pay for 3 adjudicators. But SBD allows for sole adjudication. So that cost can be reduced. And the other thing is adjudicator decide the time based on submission of the parties. Adjudicator looking at the complexity and nature of the dispute, so if the parties can keep the submission as simple as possible, the adjudicator's fee may be low. Sole adjudication, make the party's submissions and presentation as simple as possible are the reasons which can reduce the adjudication fee.

Candidate: Then sir the appointed adjudicator may not the expert for that particular area, so do the adjudicator has to take help of expert to resolve the case?

Interviewee: Very rarely it will happen. Because the parties know the nature of their dispute. So they normally appoint a person who is expert in that particular area. When the institution appointing, they also look at the nature of the dispute. They will put an appropriate expert.

Candidate: Ok. Then sir what about the arbitration cost? And also sir, in adjudication who will prepare the document of the parties, if there is dispute between employer and the contractor, who will prepare the document of the employer? Are they talking a legal support?

Interviewee: It depend on the nature of the dispute. If it can be manage within the contract, the engineer or the contractor will prepare the document. If it is complicated, then they will have to get the assistance of the lawyer. So, it cause to increase the cost. Perhaps if the engineer does, the employer will not have to pay additional payment. Because the employer pays to the engineer under the contract.

Candidate: Sir, What about the cost of arbitration? Let's think ad hoc and institutional for the same case, what is most suitable method?

Interviewee: Cost wise ad hoc is better than institutional. Because, in institutional method the institute is charged a fee. It may be huge fee. Sometimes it will be a percentage of disputed amount. This is the main reason, ad hoc is cost wise better than the institutional. But in ad hoc arbitrations not is better than the arbitrators. Because, how good is the arbitrator is arbitration process also that much good. It means the arbitrator has the control. Otherwise sole arbitration, ad hoc arbitration are cost effective. If you can go to the sole arbitrations, cost may be less than panel arbitration.

Candidate: then sir, attributes of ADR. How about the range of issues when considering nature of the negotiating? When resolving dispute, is the range low or maximum?

Interviewee: Minimum. Less complex and simple disputes can be solved in negotiation.

Candidate: How about conciliation?

Interviewee: You can go up to the complex disputes. But it depends on the party's interest or intention to settle. As long as the parties' intention, even complex dispute can be solved. Because I have resolve many complicated cases in conciliation. If parties are cooperating, despite of how much the complex of the dispute it still can be solved.

Candidate: What is the range of issues in mediation?

Interviewee: Any range can be done in mediation. In conciliation also any range can be done.

Candidate: Then, what about adjudication

Interviewee: Yes, any range. Arbitration also any range can be done.

Candidate: Next one is voluntary. It means, which one shows the parties intention to solve dispute self-voluntary?

Interviewee: Negotiation, mediation and conciliation.

Candidate: Then what about adjudication and arbitration?

Interviewee: It can be shown or not. Because, they are compulsory procedures. When there is dispute arisen, SBD 02 or any other form of contract, the first step that they will have follow is adjudication. It is by default one.

Candidate: Then sir, control by parties? Negotition?

Interviewee: Negotiation is 100% controlled by parties.

Candidate: Conciliation?

Interviewee: There is about 90% of control.

Candidate: Mediation?

Interviewee: More than about 95%, parties can control.

Candidate: Adjudication?

Interviewee: No. there is no control and arbitration is also there is no control by parties. In adjudication control is with the adjudication as well as in arbitration, arbitrator has the control. But there is thing called party autonomy in arbitration. In arbitration and adjudication parties have control in certain things.

Candidate: I think only appointing?

Interviewee: No. appointing, procure, conduction, what evidence they want to reach, what is the procedure, how long, where to sit, these things can be controlled by the parties.

Candidate: Ok.

Interviewee: And also whether to read evidence, whether to read expert evidence, whether to read evidence only by the document, they will give the witnesses.

Candidate: Is it under the arbitrator. If you are the arbitrator, and I am saying that no I can prove this thing with the evidence. Does the arbitrator has the power whether looking the evidence or not? Or does the arbitrator has the power no we don't want to see evidences, we can go with the documents?

Interviewee: It will not happen actually. Unless it is very clear. Because there is a one called natural justice. It means parties should allow a reasonable opportunity to present their case. So, that's why usually arbitrators are not going to limit it.

Candidate: Sir, Let's think that the case is going very lengthy, but we can see this is resolve clearly. In that case what will happen?

Interviewee: In that case arbitrator can ask, why you want to bring that witness? What is the purpose? Is that important? But suppose that party is already submitted enough documents, show relevant witnesses, so that time the arbitrator can ask, what is the use of that one? Why you are going to perform like that. So the arbitrator has to power to decide whether that evidence is useful or not? Otherwise if the party says that I want to bring the witnesses, generally the arbitrator will not preventing. But in adjudication this will not happen. Normally adjudication is only limit within documents.

Candidate: Sir, Next one is flexibility. How about negotiation?

Interviewee: Yes. Negotiation is very flexible. Then in the conciliation then mediation. Then adjudication is less flexible. Then arbitration is least flexible. When compared with courts, all these methods are flexible. There is party autonomy in arbitration. Parties can select the arbitrator, place as per their wish. Parties are free to choose authorized representative. The way they follow the evidence, procedure are also can controlled.

Candidate: Then formality? In negotiation there is no formality isn't it?

Interviewee: Yes

Candidate: Then the conciliation?

Interviewee: No

Candidate: Mediation?

Interviewee: No. Mediator is the person who decides it. In conciliation also method is decided by the conciliator. There is no formality. Conciliator sometime conducted a discussion and resolve, or sometimes asks to submissions. If a site issue, sometimes he will go to the site and take measurements. Therefore, no formalities. It depends on the case.

Candidate: Then adjudication?

Interviewee: Generally there is a formality. There is a procedure, certain standard documents which parties have to provide, adjudicator acts in a certain manner. So there is a formality.

Candidate: Arbitration has the formality, isn't it?

Interviewee: Yes.

Candidate: Then what about the privacy? Are these all procedures are private? Isn't it?

Interviewee: Yes. All these methods are private. In the negotiation if the parties wants, they can let others to come.

Candidate: Generally negotiation is private. Isn't it?

Interviewee: Yes.

Candidate: Then confidentiality?

Interviewee: Confidentiality is there in all methods.

Candidate: Then neutral third party? Let's say in negation, we can't say parties are neutral? Right?

Interviewee: Yes. Parties are not neutral.

Candidate: Then conciliation?

Interviewee: Conciliator is neutral.

Candidate: Mediation?

Interviewee: Mediator is neutral.

Candidate: Adjudication?

Interviewee: Adjudicator is neutral.

Candidate: Arbitration?

Interviewee: Arbitrator is neutral.

Candidate: Then Power to compel consolidation? It means the ability of taking decisions.

Interviewee: It means the person who is resolve the dispute. Right?

Candidate: Yes. In negotiation there is no such thing, right?

Interviewee: Yes. And also mediation is not having that. You are asking the decision which I am going to take for resolve dispute, the ability to impose that decision to others. Isn't it?

Candidate: Yes, Negotiation is not having such thing, right?

Interviewee: Yes. Conciliation is also not. Conciliator gives the report. And it's up to the parties to accept or reject it.

Candidate: Mediation?

Interviewee: Not at all. Mediator persuades the parties to reach their own settlement.

Candidate: Adjudication?

Interviewee: More than conciliation and mediation.

Candidate: Arbitration?

Interviewee: Arbitration is more than the conciliation. Because arbitration decision is final and binding unless it is one of the parties apply to the high court. As you can see this consolidation is increasing one by one.

Candidate: Neutral third party's knowledge in construction? In negotiation there is construction knowledge with both parties. Then what about conciliation and mediation?

Interviewee: Normally, parties appoint a person as a conciliator, who has more construction knowledge than them. Sometimes a mediator may not having that much of knowledge on construction. But he may be an experienced, clever mediator. Mediator does not needs that much of knowledge. But conciliator should have good knowledge. Because he gives a report on that. Mediator just persuade the parties to come to a settlement.

Candidate: Then what about adjudication?

Interviewee: Compulsory

Candidate: In arbitration?

Interviewee: Also compulsory. But sometimes construction knowledge may not be compulsory, because there may be a lawyer sitting as an arbitrator.

Candidate: Why is that so?

Interviewee: Sometimes parties prefer lawyer than construction professional.

Candidate: Once I asked from a lawyer that since you are not a construction professional, how you are going to resolve disputes. He said that normally, he has to handle contract law related cases. Parties should to be really careful when selecting arbitrator or third party.

Interviewee: But suppose the dispute is merely a construction matter, the lawyer is not suitable.

Candidate: Lawyer usually follow evidence and he is trying to stick with his ordinary procedure like court.

Interviewee: Generally, when selecting a third party, parties are looking at the nature of the dispute. And then appointed the third party. But there may be some lawyers who resolve construction cases by practice.

Candidate: Next one is consensus.

Interviewee: Consensus means parties are agreed with their own. Consensus is maximum in negotiation. Then conciliation. Mediation is also similar as conciliation. Other methods may be not having consensus. Because in adjudication or arbitration, once the decision is given the parties are bound to follow. Unless they did not give dissatisfaction note within 28 days in adjudication. In the arbitration they are bound to follow it, unless they do not submit application to high court.

Candidate: Sir, what about the fairness of the settlement?

Interviewee: In negotiation settlement, the person who has more negotiation power, settlement is favor to that party.

Candidate: Sir sometimes adjudication or arbitration will this happen?

Interviewee: No. Conciliation is fair than the negotiation. But conciliator sometimes give decision by favoring to the strong party. But fair than the negotiation. Mediator persuades the parties. Sometimes if the mediator is good and genuine, when parties are trying to solve the dispute, he will try to support to that tight party. Someone may do not such things because it will be effecting to the parties when reaching settlement. Because it will be a reason to fail all mediation process. But I think mediator did not support unfair settlement. Adjudicator may looking at the frailness and reasonability of that decision because it is inquisitorial process. Let's think he sees that the one party is weak, one party did not submit the document properly, and he can dig in the matter. In that situations adjudicator can be fair. But in the arbitration you cannot do this. Merely you have to depend on the evidences which led by the parties. Fairness is higher in the mediation and adjudication.

Candidate: Creative agreement? Or settlement?

Interviewee: Negotiation, conciliation and mediation comes for the settlement. Adjudication and arbitration, you are bound to follow the decision. Parties can reach creative agreement in conciliation and mediation. Because in mediation, parties are free to come to their own settlement. From the conciliator also there can be a creative report.

Candidate: Then sir, scope of remedy to satisfy interest?

Interviewee: What do you mean? Is this the necessity of the parties?

Candidate: Yes, necessity of parties. It means the effort of satisfaction of both parties.

Interviewee: It is there in the mediation. Mediator looks at the interest of parties and their intentions. Especially in facilitative mediation and settlement mediation. In facilitative mediation mediator structures the process to assist parties in reaching a mutually agreeable solution. Party's necessity is there in mediation. Settlement mediation takes as its objective encouragement of the implement to bargaining towards a compromise of a central point between parties proportional demand. In there also parties are satisfied. Interest of the parties is high in the mediation.

Candidate: Then adjudication, arbitration?

Interviewee: No. Arbitrator gives the decision what he feels right. He does not look at the satisfaction of the parties. In conciliation also there is parties' satisfaction. Because to the successful conciliation process parties' satisfaction need to be there. Conciliator is also looking at the interest of the parties. Then only the dispute resolution process is reaching to the success. Conciliator has duty to give decision which can satisfy both parties. But I think in mediation process, party's satisfaction is high.

Candidate: What are the benefits to parties? Speed to obtain?

Interviewee: High in the negotiation. Then conciliation. Then mediation. Because it has a process. Obtaining mediation time is higher than the conciliation, because it has a little process. Because there is few meetings to conduct with the parties. I have experienced some conciliation process there may one meeting with parties. Then conduct one meeting or not, then give the decision.

Candidate: Then adjudication?

Interviewee: Time is comparatively high. Because there is time period stating that 24 days or 84 days, but it will take more time than that. Because parties are requesting to time for submissions, they requesting extensions and adjudicator takes time, so that 3 or 4 months will take to complete the adjudication process.

Candidate: Arbitration?

Interviewee: Adjudication process can takes years to complete.

Candidate: Sir, why they giving extension to the process? I mean the extension request by the parties.

Candidate: If one party says that their person who conduct the process is not be able to come due to sickness, the adjudicator will allow for the extensions

Candidate: Why is that so?

Interviewee: On humanitarian grounds. Arbitrator or adjudicator allows that kind of extensions normally. Parties want to settle the dispute, so the adjudicator or arbitrator normally, allow that kind of extensions.

Candidate: Is the other party denying that request?

Interviewee: Very rarely. If the party requesting lot of extensions, then the other party raise an objection. Generally they allows for the extensions for reasonable issues.

Candidate: Are we can request an extension in courts?

Interviewee: Yes, court allows for the extensions. I think it has different procedure. But the court is allowing for extensions for reasonable issues.

Candidate: Then cost to obtain the decision?

Interviewee: Zero in negotiation. Then conciliation, then mediation, then adjudication and arbitration. Then liabilities for opponent's cost? In those procedures both parties bear the cost. If one part is lose the case, may be winning party can claim the cost from other party. But this is applied on arbitration only. If we won the case, sometimes near to 100 % of money that we incurred to the process can be claimed from the other party. It depends on the percentage of wining. Normally this is the Nome. Sometimes arbitrator reasonably feels that the wining party needs to be claim, he can give claim from the other party. That liability is in the arbitration only.

Candidate: Is the cost of arbitration not include in the document, which parties are submitting?

Interviewee: Both parties are requesting cost of arbitration in their first submission.

Candidate: Let's think there is two parties called A and B. Suppose A won the case, Does B should give the claim to the A?

Interviewee: Yes. Suppose A won 100%. 100 billion is the A's claim. Arbitrator's cost is also 100 billion. So the arbitrator can give decision A's claim is also 100 billion, and B have to pay it. It is a part of arbitration award.

Candidate: Then sir I have identified causes of disputes. So I am going to find out, what is the most suitable method for resolving that disputes. First I have identified the problems which create by the employer. Variation initiated by the owner, it will cause a dispute? What is the suitable method for that kind of dispute?

Interviewee: First 3 types of ADR methods are not suitable, first 3 types means negotiation, mediation and conciliation. These methods are not suitable for these kind of dispute. Because these methods are conducted with parties willingness. But in here the owner says that he is not allow for the variation, so that 3 voluntary methods are not suitable. Ideal way is going for the adjudication. If it fails, then arbitration.

Candidate: Then, payment delays?

Interviewee: Payment delays normally the employer accepts. Sometimes like government officers are not like to give interest. Ideal way is this dispute is adjudication. Payments delays are clear facts. If there is payment delay, it is entitle for the contractor. That is contractor's right under the contract.

Candidate: Change of scope?

Interviewee: Scope change be happen due to 2 parties; the employer, or architect or design engineer. Sometimes negotiation process will be successful for this kind of disputes, because sometimes those 3 parties will accept the fault. If negotiation fails, then conciliation process can be successful more often. Mediation process also can be done.

Candidate: Then, financial failure of owner?

Interviewee: What do you mean?

Candidate: The employer can't pay, he is financially fail. But the construction is done certain extend or completely.

Interviewee: Any of these process will not be successful. We will have to go to the courts. This financial failure means bankruptcy or insolvency, so any of ADR method will not be useful for that.

Candidate: But the contract says to follow the steps first, other than the court procedures.

Interviewee: Yeah, That is problem, if there's arbitration clause in the contract, parties cannot straight way go to the courts. But there is a problem. If the employer faced bankruptcy or insolvency, there will be a lengthy process when following the adjudication first and then arbitration and then court proceedings. Normally for these kind of disputes, court appoints a liquidator and seize the properties if the employer. Then dived the properties among the creditors. I need to think about this to get an answer.

Candidate: Then suspension of work? The employer suspend the work.

Interviewee: Under the contract there may be many reasons, due to contractor's issues, employer's wish. Always suspension can be a dispute? Because according to the contract, the employer can suspend. Normally, after the suspension there will not be a dispute always. If the contractor is right or wrong, the employer can suspend the work. If there is not re-commencing of work, or suspension time is very long, then the contractor can claim suspension related claim. That is the point the dispute arise. Merely as soon as the suspension, there will not be a dispute. Dispute can be occur due to the termination. Suspension is allowed in the contract. Contractor engineer can suspend the work, other than the reasons of the contractor he can get a claim.

Candidate: So, sir what is happen that kind of claim?

Interviewee: It depends on the employer. Sometimes it can be solved in conciliation or mediation. But ideal is adjudication process. Because, the construction expert is given the decision. He may be an expert of relevant terms of the contract more than the conciliator or mediator.

Candidate: Nonpayment of changes?

Interviewee: It is also variation, right? Where did you find those?

Candidate: By referring literatures.

Interviewee: Ok

Candidate: Then, confusing requirements of owner?

Interviewee: Adjudication is ideal. Because the employer may not has that much of knowledge about the construction. So that's why confusing requirements occur. I think he does not understand negotiation, mediation and conciliation. Perhaps if it is a simple thing conciliator will do. Otherwise adjudication is best.

Candidate: Owner furnished materials and plants?

Interviewee: What is the dispute?

Candidate: The employer did not provide materials and plants.

Interviewee: Adjudication is the best for that. There is a reason for not providing. So I don't think that negotiation, mediation, conciliation are suitable. We can't think that employer will understand his fault and rectify. Contractor has due to delay. Most probably the employer will not pay. Adjudication is the best. Perhaps in conciliation, he will understand. So, adjudication first and conciliation is second best methods.

Candidate: Late giving possession

Interviewee: Adjudication first and conciliation second.

Candidate: Unrealistic expectations? Is this same as confusing requirements?

Interviewee: Yes. It seems similar.

Candidate: Then sir, issues which arise due to the contractor. Delays I work progress.

Interviewee: Delays in work progress is not only a cause of dispute. Dispute arise when the employer impose the liquidate damage claim.

Candidate: After a completion of project, if it is functioning building let's say a hotel. Due to the contractor's delay employer will has loses because the building not functioning. Does the employer can get claim?

Interviewee: It is also a delay. For that, there is liquidated damages provision in the contract?

Candidate: If the employer refuse to pay, what is the ADR method that we have to follow?

Interviewee: Adjudication. In here after the delays of work the employer wants to get liquidated damages claim. In here, the contractor comes with lots of reasons for delays. So that the both parties are in a different positions. I think that first 3 methods negotiation, mediation and arbitration can't be used? This normally depends on what is the psychologically, what is the positions of the parties and whether that position can be change or resolve by those voluntary procedures. If the parties are adhering to the respective positions. Voluntary procedures are not suitable for this type of case. It should be some sort of arthritically decision.

Candidate: Sub contractor inefficiency?

Interviewee: Is the dispute between subcontractor and the main contractor or main contractor and the client?

Candidate: Main contractor and the client

Interviewee: Subcontractor inefficiency is a main contractor's inefficacy. Because that is his domestic own sub-contractor. Even nominated subcontractor, reasonable objection is not early. In here also adjudication is better.

Candidate: Time extensions?

Interviewee: Put EOT claim.

Candidate: EOT claim is put, but I is not given to the employer.

Interviewee: That is related to the engineer and may be the employer. Conciliation can be done to some extent. But adjudication is stronger than conciliation.

Candidate: Quality of works? If there is issue in work quality?

Interviewee: Arbitrators and the adjudicators very rarely go to the site. If the parties are willing agree, conciliation process is good. He will go to the site, he will do tests if required, he will do site based works, based on that he will decide. Second best method is adjudication, if the parties are not willing to agree.

Candidate: The adjudicator who is appointed at the initial stage of the project, will he be Ok for this process?

Interviewee: You are saying standing adjudication, yes he will be Ok. We are talking about ad hoc adjudication up to now. Standing adjudication is ideal. Standing adjudicator should visit site compulsory within certain time period.

Candidate: Sir where can I find it?

Interviewee: In SBD conditions, adjudication agreement. After every 84 days stand adjudicator should have to visit the site.

Candidate: Financial failure of the contractor?

Interviewee: Adjudication and arbitration. Ideal way is going to courts whether they can go.

Candidate: Technical inadequacy of the contractor

Interviewee: Quality of work is a result of this. Technical inadequacy means, the contractor nor capable and his staff is not capable for doing that particular job. Standing adjudication is more suitable. Adjudication and arbitration is also good for that.

Candidate: Non-payment to subcontractor

Interviewee: Dispute between whom?

Candidate: Contractor and the employer

Interviewee: Nonpayment to the domestic subcontractor is not a problem for the employer. But there is problem when dispute arising nominate sub-contractor and the main contractor. Nonpayment of nominated sub-contractor, the employer has to right to know whether is getting payment or not which the amount certified by the engineer. In here also better to go for the adjudication.

Candidate: Under quoting

Interviewee: What is the dispute? Un-performance by the contractor. Adjudication is better.

Candidate: Major defects in maintenance?

Interviewee: What is the dispute?

Candidate: If the building cannot be functioned

Interviewee: There are defects in any building. Contractor's duty is rectifying those defects in defect liability period. Now here arising defect is not a dispute. If the contractor refuse to rectify, does not rectify properly those are the disputes. Just an appearance of a defect in the building is not a dispute.

Candidate: If the contractor did not rectify defects in defect liability period, what will happen?

Interviewee: The employer can do that work and he can deduct that amount of money from the contractor's retention.

Candidate: There is no necessity for going for ADR method? If the amount is higher than the retention amount?

Interviewee: Yes. There is performance bond. In the valuing that particular work amount, dispute can be arisen. So for that adjudication or arbitration is better for solve that dispute.

Candidate: Inappropriate claims?

Interviewee: Adjudication and arbitration are better.

Candidate: Then sir, design related causes of disputes. When design errors are occurred,

Interviewee: Design is from the engineer. Engineer in the sense employer's agent. Do you think, occurrence of design errors, will the engineer or the employer accept that in voluntary procedures?

Candidate: No. It will effect to their carrier as well, right?

Interviewee: Voluntary procedures will not be suitable. Adjudication and arbitration are better because of that.

Candidate: Next one quality of design?

Interviewee: Same.

Candidate: Availability of information. It means information regarding the design is less.

Interviewee: Sometimes, conciliation will be suitable. If the conciliator makes the engineer or the employer to understand, there is no details regarding the design they may be understand.

Candidate: Some problems can be arisen due if the contractor makes some design changes on his own because of inadequate details. Are there such cases like that? Suppose putting a screed, we know that 1:3:6 is the general concrete ratio. But it is not in the drawings. Since the contractor knows the general procedure so, contractor followed it. After that the engineer said that no, it should be grade 25. In such cases what is the most suitable method?

Interviewee: Adjudication is better.

Candidate: I think that in that contractor should has some technical knowledge regarding construction issues. Are we not accept that thing in the contraction?

Interviewee: No. Always the contractor has to get instructions from the engineer. Contractor must ask, he can't take decisions regarding the design. If that design change by the contractor went wrong, it is a risk to the contractor.

Candidate: Inadequate/incomplete specifications. It seems similar to previous one, right?

Interviewee: Yes.

Candidate: What will happen when occurrence of design changes?

Interviewee: What is the disputes?

Candidate: Variations can be occur, right?

Interviewee: Yes.

Candidate: EOT can be claimed, right?

Interviewee: Yes, it can be go for the complications in the contract. Design change is normally happen due to the engineer. Most probably he may not accept that in voluntary procedures. So that I think adjudication is best.

Candidate: Then, contract related causes of disputes. Ambiguities in contract documents. What will happen?

Interviewee: The engineer prepares the contract document. Most probably he may not accept that thing in the voluntary process. So I think adjudication is better.

Candidate: Risk allocation?

Interviewee: This is the matter of interpretation of the contract. May be conciliation is better. About 50% chance there in conciliation to solve the dispute. If not better to go to adjudication.

Candidate: Change order negotiations?

Interviewee: It means variations.

Candidate: Cost overrun?

Interviewee: To whom cost overrun? What is the dispute?

Candidate: Increase the cost and, claim is not paid, right?

Interviewee: Employer's cost overrun is not a cause of dispute. Cost overrun is not a dispute. Claim is a cause of dispute. In this means the employer's budget is exceed, right? It is not a dispute. Contractor cannot do anything for that. Dispute should be there, not an event or dispute. Dispute means parties having different positions over same thing.

Candidate: Then, different interpretations of the contract provisions.

Interviewee: Adjudication

Candidate: Multiple prime contracting parties

Interviewee: What does it means?

Candidate: There are lots of parties.

Interviewee: Multi party's contracts in construction is very rare.

Candidate: Issues related to the form of contract?

Interviewee: Mediation and arbitration. About 50% mediation can be done. Then other one is adjudication.

Candidate: Inadequate bid information

Interviewee: What is the dispute there?

Candidate: Suppose there is unavailability of information in specifications?

Interviewee: Dispute is not arise at the bidding stage, it will arise at the construction stage. What is the dispute there?

Candidate: Suppose delivered material is not in accordance with the specification.

Interviewee: It is a problem in contract interpretation.

Candidate: Such problems can't resolve by doing negotiations, right sir?

Interviewee: Yes. It will be difficult. Adjudication may be Ok.

Candidate: Interpretation of escalation/de-escalation? What does that mean?

Interviewee: It means how the escalation provision is interpret and how it compute according to the contract.

Candidate: It will be done according to the contract, right?

Interviewee: Yes. If the document is not include adequate information, there will be issues.

Candidate: What will happen then?

Interviewee: Conciliation is suitable. Or then adjudication.

Candidate: Scope of the contract?

Interviewee: What is the dispute? Adjudication, I think. Because the engineer normally does not accept issues regarding his duty. Voluntary process are not suitable. As a professional, he is on his position.

Candidate: Human behavior related cause, lack of document communication?

Interviewee: Human behavior related cases can be solve by mediation.

Candidate: Lack of team spirit?

Interviewee: Mediation

Candidate: Unfair behavior?

Interviewee: Mediation

Candidate: Effects of psychological differences?

Interviewee: Psychiatric

Candidate: Misunderstandings among participants?

Interviewee: Conciliation, mediation.

Candidate: Adversarial/controversial culture?

Interviewee: Mediation may be suitable.

Candidate: Project related causes, unforeseen changes?

Interviewee: Like variations. Adjudication is better.

Candidate: Complexity?

Interviewee: Complexity of what?

Candidate: Project.

Interviewee: What is the dispute? We always should think, we are going for ADR due to a dispute. Not the event. There should be a disagreement for a dispute. Disagreement is referred to take a decision for the process. Human involvement is there in every dispute. It is not the event or incident. There is two parties involvement in disagreement. They are havening different opinions. Suppose my neighbor's tree was fallen to my garden. It is the event. It is not a dispute. Then the action will be taken by me and my neighbor cause the dispute. Merely complexity of the project, is not a dispute. You have to be very careful in this kind of research, this is not only construction research.

Candidate: Is there a dispute related to complexity?

Interviewee: There can be problems like the contractor not able to do the works, too complex, due to unavailable technology like that. In that case technical person should solve the problem like arbitration or adjudication.

Candidate: Site conditions?

Interviewee: What is the dispute?

Candidate: it's like unforeseen changes, right?

Interviewee: Yes. Suppose when excavation there is rock under the ground. That is unforeseen incident. There is a provision in the contract to deal unforeseen events. Unforeseen event merely not a dispute. Dispute is always disagreement between parties. For this arbitrator or adjudicator giving a decision.

Candidate: Then sir, disputes cause by the consultant. Errors and omissions in design?

Interviewee: Again we discussed incomplete design, this is also like that. It is a matter related to the design.

Candidate: Defective design?

Interviewee: It is also like that.

Candidate: Consultant delay in drawings? Consultant does not give drawings on time. So it will cause construction delay. Then contractor claims EOT. Is this possible to reason out?

Interviewee: Yes. Selection of ADR method is depend on the nature of the dispute. Not according to the nature of the event.

Candidate: In that case can't we take this is the root case?

Interviewee: But, the problem is what the dispute is? We have to looking at the nature of the dispute before selecting an ADR method.

Candidate: Issues in specifications?

Interviewee: Specifications means the engineer related dispute. So, for that adjudication is better. If the problem related to engineer produce thing, better to go for the adjudication.

Candidate: Lack of experience

Interviewee: What is the dispute?

Candidate: Design error, right?

Interviewee: Yes. Adjudication is better. The engineer will not accept that the he is having lack of knowledge or experience. Voluntary process are suitable when, the parties does not

know something, or misunderstanding. Basic thing related to the engineer's profession he may not accept that.

Candidate: Sir, you always asked from me 'what is the dispute here 'during the interview. Let's suppose that all disputes are arise due to the disagreement of parties.

Interviewee: Yeah, definitely.

Candidate: We have to think what the reason for that dispute is.

Interviewee: Yeah, right.

Candidate: Suppose if it is a money matter, A should give money to B

Interviewee: Ok

Candidate: If not, there is time matter. Is this is the two things that goes for claim at the end.

Interviewee: Yes, whatever the dispute is, final end result is time and money. Time is also be money at the end. Finally comes to the financial terms.

Candidate: When we give an order, we sometime convert time in to financial terms or give a time period. Time period in the sense give one month period to complete the particular work. Are there any cases like that? I can understand time is convert to money at the end. But what am I asking is, at the end of the dispute are there any cases which gives time as a decision. When it comes to the extension of time

Interviewee: It will happen during construction, especially. During the construction period, if there is dispute regarding the extension of time, in such case arbitrator can decide you are entitle to the extension of time up to this date. Like that.

Candidate: So, money and time is the result of the dispute at the end. Suppose if there is a variation. The employer refused to pay for the variation. The contractor requesting the amount of variation and the interest. In here, variation is the cause, isn't it?

Interviewee: The cause of the dispute is valuation of the variation. Method of valuing that. That is the dispute. Whether the valuing are done with BOQ rates, new rates or day works or not.

Candidate: Are we consider whether the variation is from the employer or the contractor? Who is the party, the variation is from?

Interviewee: If the contractor, it is not a variation

Candidate: Is it a scope change?

Interviewee: Yes, scope change or instruction or work necessary to successful completion of the work. Like that.

Candidate: Suppose the employer brings a variation.

Interviewee: Let's think in construction, for school, we have to build a security hut. It is a variation.

Candidate: Dispute will be arise, when doing payments.

Interviewee: Suppose the after the completion of school, contractor moved their all equipment and machineries to anywhere else. After that the variation is brig by the employer. Contractor cannot apply his previous rates, because he moved his all machineries and equipment. For built security hut we can use day works or lump sum. Method of valuation is the dispute. Always look at the route of the dispute. Suppose when claiming for extension of time. We have to look at whether the contractor is entitle for the extension of time or not? Sometimes extension of time can comes under neutral event. If that so, contractor is not entitle. It is the dispute here. Let's think contractor is entitle for the extension of time, but there is dispute over EOT claim. So then the method of the quantification of the extension of time claim is the dispute. Always identify the point which the dispute arises. The person who resolve the dispute is taking the decision by looking at that root of the dispute. If it can be solved, dispute also can solved.

Candidate: Can negotiation, mediation and conciliation use for the disputes which arise after the construction?

Interviewee: Why not, generally time period is not effecting to the ADR process.

Candidate: Adjudication, arbitration also can, isn't it?

Interviewee: Yes

Candidate: If defect liability period is over, what will happen?

Interviewee: Yes, you can. ADR method is selecting by considering the nature of the dispute. We are not considering the time of dispute arise and at that time project process

Candidate: Finally, what I am understand is the way people are thinking is the main cause to all disputes.

Interviewee: Yes, obviously. Dispute is arise because of the disagreement between two parties. Human behavior is the main cause.

Candidate: Sir, how can we stop disputes? By educating the people isn't it? Sir, is there any case that as an adjudicator or arbitrator you feel that why these two parties are acting like this. They can solve problem by negotiation.

Interviewee: Yes, there was some cases like that. Usually the engineers and the employers are the persons who bring the case to us. Parties behavior, parties cannot act according to the contract are some reasons for disputes. Basically negligence is the main cause to disputes.

Candidate: Lack of knowledge is also a cause for dispute. Isn't it?

Interviewee: Yes, obviously.

Candidate: Lack of knowledge on contract document, contract law

Interviewee: Yes, sometimes they don't know how to manage, how to handle the problem, how to maintain relationship between parties. Sometimes adjudicator or arbitrators are also not doing proper handling of parties, don't maintain good relationship with parties.

Candidate: I think we should give a good practice to undergraduates regarding those issues.

Interviewee: I think we should give good practice to persons who are coming for dispute resolution is better. How to maintain good relationship, how to handle problem like that.