AMERICAN UNIVERSITY OF BEIRUT

THE USE OF ADJUDICATION IN CONSTRUCTION DISPUTES RESOLUTION: STANDARD MECHANISMS AND PRACTICE TRENDS

by
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AN ABSTRACT OF THE THESIS OF

Mohammad Hasan Senan for Master of Engineering
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The vast number of uncertainties faced in construction projects makes disagreements between the involved parties almost unavoidable. Alternative dispute resolution techniques serve the purpose of ending the disagreement between the parties to avoid the high implications of escalating the case to arbitration or litigation. Adjudication is one of these alternative dispute resolution methods where a neutral third party (the adjudicator or adjudication board) uses the collected evidence and analysis of events in conjunction with the relevant contractual clauses to issue a binding decision. The objectives of this research are twofold. First, it uses relevant clauses in standard contract documents and literature in addition to the understanding of the adjudication mechanism to synthesize the attributes and qualities deemed vital in a decision maker, whether he is an Engineer, Project Manager, or Adjudicator, to issue a binding decision based on the assigned contractual authority. Second, it aims to deduce the additional qualities that distinguish the adjudicator who issues a decision that qualifies to be, as well, final, through looking extensively into the contractual requirements and procedure of the adjudication technique and the trends visible in statistical data published by adjudication centers. The qualities included having contract language proficiency, technical, managerial, and contractual know-how, and team and time management skills.

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DEDICATION

My work is dedicated to the people who taught me that the best interest is earned when investing in knowledge, the people who were there to support me with every step in this journey, my parents.

CHAPTER I:

INTRODUCTION

1.1 Background

The vast number of uncertainties faced in construction projects makes disagreements between the involved parties almost unavoidable. One main reason behind these uncertainties is having incomplete, vague, or ambiguous contract conditions clauses. Other reasons include facing an imbalanced allocation of risks in the contract, design variations, and unforeseen events (S.-O. Cheung & Suen, 2002). These uncertainties symbolize the main roots of a disagreement which, if not dealt with in its early stages, may evolve into a dispute or lead to contract termination.

The standard forms of contracts such as the International Federation of Consulting Engineers contract (FIDIC), the New Engineering Contract (NEC), and the Joint Contracts Tribunal standard building contract (JCT) introduce various clauses to mitigate risks, regulate the adversarial relationship between the parties, and control the dispute timeline. The use of standard contracts is considered to be a way to ensure fair distribution of risks among project participants and a tool to implement efficient project management (Totterdill, 2001). In these aforementioned standard contract conditions, the claimant should follow a detailed procedure in order to be entitled to a time extension and/or compensation. The first step is to follow the contractual claim notice requirements following the occurrence of the triggering event. This time-barred notice, which is considered as a condition precedent, is essential to preserve the right and eligibility of the claim (Abdul-Malak & Khalife, 2017). Condition precedent is a

common mechanism used in various types of contracts (Al Qady et al., 2013). It is perceived as a required act before having the right to claim fulfilled. Condition precedent in construction contracts is found in contract clauses that set timeframes for some actions to be done before establishing a right or performing other acts (Lim, 2012). In the case of owner's default, as the case when the owner fails to make payments according to the payment schedule, the contractor has to send the owner a notice that he's in breach of contract. This leads to suspension of work if payment isn't made within the stipulated time frames. In some situations, contract provisions lack explicit time frames for notices. Phrases such as "as soon as practicable" or "in reasonable time" are used instead. As parties may have different interpretations for such vague timeframes, conflicts may arise due to the disagreement that may result between the decision maker and the claimant (Harris, 2015). Failure to follow the contractual notice requirements will increase the risk of getting the claim rejected and denied even without looking at its merits (Miletsky, 2001).

Dissatisfaction with the assessment and decision of the initial decision maker (Architect/Engineer, contract administrator, or Project Manager) regarding the claim allows the evolvement of the claim into a dispute. Referring the dispute to formalized dispute resolution strategies such as litigation or arbitration was the norm in the construction industry. However, the industry called for alternative strategies that also contain a neutral third party such as mediation and dispute boards due to the high costs involved, in terms of time and money, in litigation and arbitration (Haugen & Singh, 2015).

Mediation is an alternative dispute resolution method that allows the disputants to build an enforceable agreement with the help of a neutral third party. This third party, referred

to as the mediator, attempts to convince both parties to avoid litigation or arbitration, through emphasizing the advantages of reaching a quick agreement, which they can both agree to, instead of having an imposed decision by an arbitrator or judge. As parties commence the mediation session, they sign to a confidentiality agreement that allows them to discuss interests, options, and fears to generate new solutions and possibly solve all major and minor disputes while preserving work relationships. The mediator, in the mediation session, tries to create an atmosphere of trust between the parties while tackling the core of the dispute in order to create an agreement using an advanced integrative approach (Senan et al, 2018). This agreement, if reached and signed, becomes legally binding and compliance is enforced (Twomey, 2006).

Adjudication is another popular alternative dispute resolution technique in which the dispute is referred to dispute boards which can involve either a single neutral third party or a three-member impartial panel. In the case of a panel, each of the owner and contractor assigns a neutral member, and the two jointly choose the third member to act as the board's chairperson. Dispute adjudication board (DAB) and dispute review board (DRB) are two variants of the dispute boards that share similar characteristics and procedures. While dispute boards are usually assigned following the contract signature, these boards can be introduced anytime in the project lifecycle. However, a great advantage of having a dispute board engaged earlier is the minimal effort needed to explain events and contract conditions in the dispute resolution process (Harmon, 2011). Dispute board members conduct site visits and attend meetings in order to facilitate communication between project participants, minimize the occurrence of disagreements, and resolve any dispute in its early stages. This proactive system makes dispute boards also fall into the category of dispute avoidance techniques (Gerber and

Ong, 2010). When a dispute is referred to the dispute board, the board arranges informal hearings to give each party, the claimant and defendant, an opportunity to present his position in order to collect facts and issue a fair but non-binding recommendation in the case of DRB, and a binding decision in the case of DAB (Agdas & Ellis, 2013).

While the DRB's non-binding recommendation is used by both parties as a chance to have a sense of what the outcome of arbitration would be, the decision taken by DAB is considered as binding and final unless a party issues a notice of dissatisfaction. This notice of dissatisfaction is usually coupled with an intention to escalate the matter to arbitration or litigation. If no such notice is issued, any of the parties can enforce the decision in court depending solely on the fact of the decision without the need to prove the underlying dispute (Marshall, 2012).

A report published by the Adjudication Reporting Centre of Glasgow Caledonian University in 2012 showed that the valuation of work done has always been one of the main matters behind disputes along with valuation of variations. Other matters include interim payment issues, vagueness of contractual clauses and terms, defective work, and assessment of reasonable extension of time. With all these various categories, the adjudicator (or adjudication board members) should be of various technical backgrounds in order to understand all the merits of the dispute. In addition to the technical background and previous experience, the adjudicator should have the jurisdiction to take decisions and act fairly, impartially, and naturally in accordance with the requirements of natural justice in order to issue a binding and enforceable decision that is legally similar to the First-tier Tribunal decisions (Marshall, 2012).

1.2 Problem Statement

As dispute occurrence in construction projects is almost inevitable, dispute avoidance and mitigation techniques are always visited and studied. Alternative dispute resolution techniques serve the purpose of ending the disagreement between the parties to avoid the high implications of escalating the case to arbitration or litigation. The claim is first referred to the decision maker in the project who issues a binding decision. As one of the parties (or both) may be dissatisfied with this decision, direct negotiations may help the parties end the dispute. Failure to reach an agreement in direct negotiations necessitates introducing a neutral third party who either facilitates the discussion and reduces the gap as a mediator or issues a binding decision as an adjudicator. Adjudication is an alternative dispute resolution method where a neutral third party (the adjudicator or adjudication board) uses the collected evidence and analysis of events in conjunction with the relevant contractual clauses to issue a binding decision. Literature addressed extensively the procedure and attractiveness of the existing alternative dispute resolution methods administered by a neutral third party such as mediation and adjudication. However, it has not fully addressed the needed qualifications of the neutral third party that allow him to issue a fair, binding, and enforceable decision that can also be final in the case of adjudication. In this regard, the question of what qualities, attributes, and background an adjudicator should have has not been fully answered, thereby leaving such an important aspect of this alternative dispute resolution technique barely tackled although it directly affects the soundness and credibility of the adjudicator's decision.

1.3 Research Objective

The objectives of this research are twofold. First, it uses relevant clauses in standard contract documents and literature in addition to the understanding of the adjudication mechanism to synthesize the attributes and qualities deemed vital in a decision maker, whether he is an Engineer, Project Manager, or Adjudicator, to issue a binding decision based on the assigned contractual authority. Second, it aims to deduce the additional qualities that distinguish the adjudicator who issues a decision that qualifies to be, as well, final, through looking extensively into the contractual requirements and procedure of the adjudication technique and the trends visible in statistical data published by adjudication centers.

1.4 Methodology

The methodology to be followed in this research is expected to include the following steps:

1. Conducting a thorough review of the literature focused on disputes in the construction industry, in general, and the adjudication use in dispute resolution, in particular;
2. Examining the relevant contractual provisions and clauses in standard contract documents, such as those by the FIDIC, NEC, and JCT, which regulate the issuance of a binding decision, in order to highlight the stipulated contractual timeframes and related requirements;
3. Analyzing statistical data published by adjudication centers regarding cases referred to adjudication, in order to deduce the trends and the way with which project participants view this technique and investigate the effect of having a

valid, sound, and binding adjudicator decision on the chances of ending the dispute before reaching arbitration or litigation;

4. Proposing a set of qualities and attributes needed in a decision maker to issue a binding decision and extending it with additional ones needed in an adjudicator to qualify his binding decision to become a final one based on deductions from former steps; and
5. Concluding the work with a brief summary of the findings, recommendations, and possible future work.

1.5 Significance of Research

Adjudication is a popular alternative dispute resolution technique that relies on the understanding, judgment, and fairness of a neutral third party who issues a binding decision, which could lead to ending the dispute. If no notice of dissatisfaction is delivered by one of the disputants within the stipulated time bar, this decision becomes final as well. In this context, this research studies the adjudication mechanism and suggests a set of attributes and qualities needed in an adjudicator to qualify his binding decision to become a final one that has the same merits of First-tier Tribunal decisions. Ensuring the presence of such qualities and attributes in an adjudicator shall have the likely effect of enhancing the effectiveness of adjudication and reducing the chances of a party serving a notice of dissatisfaction following the issuance of an adjudicator's decision. For this, this research serves as a guide for disputants in the process of choosing dispute adjudication board members to secure a sound, fair, and impartial decision by these members. Moreover, the research compares the steps and timeframes that regulate the adjudication technique under three standard forms of contracts and

highlights the importance of statistical data in understanding the trends and shifts in using adjudication to resolve construction disputes. The research concludes with some recommendations in order to regulate the process of training and appointing adjudication board members to protect the credibility and integrity of adjudicators and improve the reliability of this technique in the industry.

CHAPTER II:

LITERATURE REVIEW

2.1 Inevitability of Disputes

With all the recent updates and additional clauses, dispute avoidance mechanisms, and regulations incorporated in standard construction contract documents, disputes continued to be inevitable. For this, stakeholders are trying new policies that help in dispute prevention. Effective management policies that include strict staffing policies, quality assurance plans, and duties distribution plans that separate design from contract administration (S. O. Cheung & Yiu, 2006) are some of these policies which may decrease the number of disputes but not stop them. Moreover, managers usually attempt to address a claim, which is defined by Levin (1998) as a demand written by one of the project stakeholders according to the signed contract seeking time extension, extra payment, or any remedy or adjustment for a problem faced during the project lifecycle, before it escalates to a dispute.

Managers, engineers, and owners can expect challenges regularly during construction operations. Such challenges may also be encountered during pre and post-construction phases (Yih Chong, Balamuralithara, & Choy Chong, 2011). Technical problems that occur during the construction phase may be complex but can be solved. This type of problems, that arise from incomplete design or design variations, needs different skills than those needed for problems that occur due to ineffective communication. Additionally, the escalation of project size, cost, and design complexity nowadays

increased the challenges on project stakeholders in matching the anticipated necessary skills and means in order to deliver the project successfully (Doloi, 2009).

Causes of claims can be grouped into two main categories: claims caused by owner and owner's personnel, and claims caused by the contractor and his team including subcontractors.

Design errors, ambiguities, and incomplete design information are the main sources of claims caused by the owner. The project Architect or Engineer may fail to act within the stipulated time frame to produce and review shop drawings, approve change orders, and answer requests for clarification of drawings and specifications, which may cause errors or omissions that create schedule conflicts and delays (Ahuja, 1994). Another factor that increases the possibility of having disputes is having incomplete, ambiguous, or inconsistent conditions of contract (Sertyesilisik, 2010). Checking contractual provisions, terms, rights, and responsibilities is usually delegated to contract administrators (Abdul-Malak & Khalife, 2017). For this, contract administrators should be able to grasp every single clause of the contract as failing to appropriately administer the contract due to the absence of essential managerial skills in addition to missing contractual timeframes for replies and decisions lead to disputes (Awwad et al, 2016). Clients may reject contractor's legitimate claims which may push the contractor towards submitting more claims in order to cut his losses (Sai On Cheung & Pang, 2013). Additionally, imbalanced risk allocation, where the client shifts all the risks to the contractor leaving him with a small margin of profit to ensure bid competitiveness, increases the possibility of having disputes during project life cycle (Sai On Cheung, 1997). However, with all risks assumed to be borne by the contractor, all tenders may have extremely high prices that exceed the engineer's estimate. This practice will allow

the bidding to be inaccurate compared to the situation where the owner bears the risk of the unforeseen events leaving (Ndekurgi & Mcdonnell, 1999). Furthermore, payments should be made within the contractual time frames. Due to the severe effects of delayed payments on the contractor, the contractor will directly submit claims in order to fund the subsequent phases of the project. As such, contractors raise claims in order to get compensation for the unexpected events that were unforeseen prior to contract signature (El-adaway & Fawzy, 2012).

On the other hand, owners' claims against the contractors are usually related to materials being defective or different than what was mentioned in the specifications and design drawings. Other claims may be related to damages to owners' properties or installed products, late completion, and safety breaches (Enshassi, Choudhry, & El-Ghandour, 2009). Another cause of claims is not having a standard mechanism for analyzing delays. Delay claims can be analyzed at the end of the project to assess if the delay in project completion was caused by the owner or contractor (Aibinu, 2009).

Choosing the project stakeholders is one of the project success factors. Financial stability, work experience, and previous performance are three major standards that employers look after (Doloi, 2009). Other standards may include quality control systems, flexibility, staff profiles, and tender price and quality. This prequalification process of bidders limits the acceptable bidders to those who satisfy the aforementioned standards thus decreasing the possibility of facing claims. Contractors also prequalify their subcontractors in order to make sure that the subcontracted work will be done according to the anticipated quality and within the set limits of cost and duration.

Although construction disputes are considered, according to Hellard (1988), a result of conflict of interests, goals, and principles, decision-makers should act fairly while

assessing disputes in order to limit the consequences of a dispute as it could build tension and break the trust between the contractor, employer, and employer's management team (Aibinu, 2009). Project stakeholders, including project owner, designer, contractor, and subcontractors, should be prepared to face construction claims by following a clear claim management plan that is well documented within the project contract conditions.

Due to construction market state, contractors often ignore having a thorough review of the contract before contract signature wishing to land a job at any cost. Additionally, few construction companies have an in-house management department that reviews contracts before signature (Walsh, 2017). From the owner's perspective, owners use standard contract conditions in order to have a complete contract that is error-free. Owners frequently use the same contract for several projects as they incorporate additional clauses in particular conditions. Conversely, some owners use contracts without checking what clauses apply to their particular project which increases the possibility of facing claims later on. For this, contractual issues present a great share of the number of lawsuits brought to courts that faced a substantial increase in the past decades (Tazelaar & Snijders, 2010).

2.2 Dynamics of Claims

Claims are complex in nature. The disagreement between different parties extends from acknowledging the occurrence of the event triggering submitting a notice of claim to choosing when and how to assess its impacts and quantify the reasonable compensation. This notice is considered a gateway that allows proper management work to take place by the contract administrator and project manager, following the occurrence of the

event, and until the issuance of a decision on the matter by the initial decision maker (Mewing, 2014). The notices are of great benefit for all the project participants as they serve as proof of communication and a way to follow up with the events to do analysis and issue decisions (Abdul-Malak & Khalife, 2017). In delay claims, for example, lacking fixed and consistent timing and method of analysis to assess, quantify, and issue decision may increase the complexity of the claim as project activities and phases are interconnected (Kumaraswamy & Yogeswaran, 2003). The used methods of analysis fall into two main categories, prospective and retrospective. The prospective methods use the predicted most likely impact of the issue on the project schedule and budget. Retrospective methods, on the other hand, use the actual impact of the issue on the project schedule and budget. For this, the latter can only be used after the completion of works or after making sure that the event has no more impact on the project.

Quantifying the impacts of an event is also a challenging task. Different assessments of the impacts of an event will create a conflict between the owner and the contractor. The position of the contract administrator and the engineer in assessing and quantifying the impact of an incident may increase the conflicting nature of the claim as it's hard for the claimant to believe that the owner-appointed contract administrator or engineer will act objectively and fairly while issuing a decision especially if it's against the owner's interests. In addition, the engineer is one of the owner's personnel. This makes claiming against a decision taken by the engineer hard as the claimant will send his claim to the engineer himself. Vague and inconsistent design drawings in addition to late payment certificate are examples of the defaults caused by one of the employer's agents (Ndekugri et al, 2007). Most delay and disruption claims cause loss of productivity, termination of subcontracts, loss of profit, increase in overhead and storage fees, and

increase in labor fees (Bramble & Callahan, 2000). Delayed payments, on the other hand, may cause financial difficulties for the contractor that may lead to slowing down the progress of works (Enshassi et al., 2009) and (Best & De Valence, 2002). Furthermore, delays affect the interest of the owner as this may postpone the inauguration of the facility thus leading for significant losses particularly in commercial projects (hotels, commercial centers…) (Marzouk & Moamen, 2009).

2.3 Types of ADR

Despite having a thorough understanding of the causations and impacts of the disputes, the latter continues to alter the construction process. Different methods of conflict resolution exist, each tailored to the characteristics of the issue and the desired outcome. Spurin (2003) explains that the aim of every dispute resolution mechanism is to make sure that all project participants are satisfying all contractual responsibilities and obligations and compensate the affected party in case of any breach. This predetermined mechanism will have a direct effect on several outcomes such as the time needed to solve the dispute, the decided value, satisfaction of participants, and other outcomes (Treacy, 1995). Several alternative dispute resolution techniques, such as partnering, early neutral evaluation, negotiation, dispute boards, and mediation were developed as substitutes to solving the case in arbitration or litigation (Gebken & Gibson, 2006). These alternative dispute resolution techniques showed better results in terms of preserving work relationships between disputants and reducing dispute resolution costs (Cheung, 1999).

Partnering is a preventive conflict solving method as it encourages a team approach for the resolution of problems with an atmosphere of trust and cooperation. The tough

construction environment along with the nature and ideological differences of the owner, design professional, and the contractor can make partnering hard to implement. Early neutral evaluation is a second method whereby a neutral party is jointly selected to assess and predict the dispute conclusion if it were to go to court. This time-consuming technique provides parties with insight on their positions and may lead to a negotiated settlement at a very low cost.

Negotiations are generally dictated by contracts, whereby the owner and contractor's representative must try to resolve these issues in good faith within 28 days (or possibly 45 depending on the contract). Negotiations require the least cost and time investment and do not require the presence of a neutral party.

The Dispute Review Board (DRB) is another voluntary and non-binding approach perceived as one of the most effective and cost-efficient methods for conflict resolution. The DRB is formed of three members at the beginning of the project: the first allocated by the owner, the second allocated by the contractor, and the third agreed upon by both entities. Unlike other approaches, this neutral and experienced board deals with one single issue at a time, hence the quick settlements.

Adjudication is a fast-tracked arbitration under which a dispute is referred to an Adjudicator (or three-member Dispute Adjudication Board) who concludes with a decision within the timeframe stipulated in the contract. The decision that results from this cost-effective method is final and binding unless a notice of dissatisfaction is served by any of the parties (Hibberd & Newman, 1999).

Mediation, on the other hand, is a private, informal, and consensual method where parties voluntarily reach out to a mediator to assist in the negotiations. It takes place when the disagreement escalates into a dispute and relationships are strained (Harmon,

2003). At this point, the parties need a neutral third party to assist them in reaching an agreement. In this approach, the parties are in complete control of the outcome as the mediator assists them to measure the risk and find common grounds in addition to identifying the strengths and weaknesses of their case (Wall et al, 2016).

Last, arbitration is similar to litigation in that its decision is final and enforced by law. Also, this decision may not be explained unless regulations require it and the losing end may not appeal it. An added advantage is that arbitrators are usually knowledgeable in the construction industry and as such, the process is quicker than litigation.

2.4 Advantages of ADR

Several research studies emphasized the criticality of the selection criteria of a dispute resolution method. Although these methods may be specified early on before contract award, parties may agree on additional measures and methods in order to ensure resolving the dispute.

Confidentiality is the main criterion since both parties demand to keep the dispute hidden to prevent their reputation from being tarnished. For this, contractors seek techniques that preserve confidentiality especially in the case of performing below quality standards (Haugen & Singh, 2015). No party is allowed to disclose any information to the public in mediation and adjudication. In arbitration, the matter is private unless it's appealed to the High Court (S.-O. Cheung & Suen, 2002).

The overall duration taken to solve the dispute is also of high importance as disputes may cause project delay which is directly related to cost as well. This was visible in the results of the questionnaire done by S.-O. Cheung and Suen (2002) where the overall cost and duration ranked at the top of the ADR method selection criteria. While no

specific time bars for these methods are present, negotiation, mediation, and adjudication need days to weeks compared to the years needed by litigation. Cost is also associated with the needed staff and preparation. Arbitration and litigation need a team of lawyers, technical experts, and accountants which increases the expenses during the dispute resolving period. In addition, loss of productivity is expected as workers and employees are engaged in the aggregation of evidence to support the case (Twomey, 2006).

Contractors are interested in preserving a good relationship with developers especially with the decline in the market. Similarly, developers like to work with the contractors again if their previous project was completed according to the desired quality and specifications and within the stipulated time. The use of negotiation and mediation serve the purpose of preserving the relationship between parties and decrease the level of tension. The facilitated negotiations mediation offers within an efficient time and financial frame, all while conserving confidentiality and work relationship, promote this technique as most attractive. Nonetheless, the rate of mediation use in construction disputes remains much lower than other recommended or imposed resolutions. The previous is attributed to a lack of familiarity with the process (Gregory-et al., 2016).

Adjudication may preserve this relationship if both parties agree to the decision of the adjudicator (or adjudication board). In case any party decides to serve a notice of dissatisfaction with the decision, the level of tension increases dramatically especially with the commencement of the arbitration. However, in some cases, the mediator is more concerned about reaching a monetary settlement and not necessarily considers the future relationship (Galloway, 2013). However, in arbitration and litigation, the work

relationships usually fracture due to having a party winning over the other (Haugen & Singh, 2015). Generally, contractors tend to stay away from litigation in order to save their hopes in getting future jobs with the same architect or owner (Stipanowich, 1998). Disputants are also concerned with the degree of control they have over the resolution process. Although both parties agree in mediation on a solution, a party may agree on a solution in order to secure fast payments (even if they were of reduced amounts) and preserve good work relationships with the other party for future work. However, adjudication, arbitration, and litigation are based on what the adjudicator, arbitrator, and judge respectively decide as fair. All decisions and agreements are binding unless a notice of dissatisfaction is served in the case of adjudication decision.

CHAPTER III:

ADJUDICATION IN STANDARD FORMS OF CONTRACTS

3.1 Preamble

The presence of a contract is essential to formalize the relationship between the parties involved in the project lifecycle. The parties, starting with the owner, general contractor and subcontractors, designers, project and construction managers, and any other combinations or variants of these roles according to the adopted project delivery method, should be aware of their rights, roles, and responsibilities. Three forms of standard contracts use adjudication as an alternative dispute resolution technique before escalating them to litigation or arbitration. The first is the International Federation of Consulting Engineers (FIDIC) contract which is commonly used worldwide. The second and third contracts are the New Engineering Contract (NEC) and the JCT contract (produced by the Joint Contracts Tribunal) which are used mainly in the United Kingdom, Hong Kong, and the Asia Pacific Regions. This chapter explains how adjudication technique is presented in these contracts and sheds the light on the clauses that specify time bars and limitations governing its application. The dispute timeline, adjudicator appointment methods, adjudication process guidelines, and decision merits in the three standard contracts are discussed.

3.2 Dispute resolution under the three contracts

The existence of a dispute before allowing one of the ADR techniques to take place is essential (Dancaster, 2008). Although FIDIC, NEC, and JCT contracts allow different

time bars for the diverse notice and referral requirements, these contracts agree that there should be an initial decision on the matter and dissatisfaction of one of the parties before referring it to adjudication. The adjudicator or adjudication board can either be named in the contract upon contract signature, nominated by the parties after the dispute occurrence, or nominated by an adjudication nominating body (Kennedy, 2008).

3.2.1 *Dispute resolution under FIDIC*

Most of the large projects in the middle east region are based on FIDIC contracts. These contracts are also widely used by the World Bank in their international projects (Barakat, 2018). The newest edition of the FIDIC Conditions of Contract for Construction, known as FIDIC Red Book, was published in 2017. The Red Book is divided into 3 main parts: General Conditions, Guidance for the Preparation of Particular Conditions, and other forms for letters and agreements. In addition to the 21 clauses, the General Conditions part of the Red Book also includes general conditions for the dispute avoidance and adjudication procedures in addition to other subclauses. Each clause of the 21 clauses represents a subject that is well addressed, detailed, and described in subclauses. The subjects of these clauses include general provisions, roles of project participants (Employer, Engineer, Contractor, and Subcontractor), engagement of staff and labor, materials, details of commencement, delays, suspensions, and completion, events, payments, and claims and disputes.

Of these clauses, clause 20, titled “Employer’s and Contractor’s Claims”, focuses on claims between project participants. The clause describes how the claims arise, for what reasons, the administrative notice and information requirements, time bars, and determination guidelines. When one of the parties is dissatisfied with the issued determination, the claim evolves into a dispute and is referred to be decided by Dispute

Avoidance and Adjudication Board (DAAB) under Clause 21 which is titled “Disputes and Arbitration”.

3.2.1.1 Claims under Clause 20

The claim may arise if one of the parties is entitled to money (additional payment for the contractor or reduction of the contract price for the employer) or extension of time (extension of contract duration for the contractor and extension of Defect Notification Period for the employer). The clause states clearly that the claiming party should send a notice of claim within 28 days of being aware of the event. Failing to send this notice within the stipulated time bars will discharge the other party from any liability in connection with the event behind the claim. The engineer should send the claiming party a notice (accompanied with reasons) within 14 days from receiving the notice of claim if he considers that the party has failed to give the notice within the 28 days period. Not sending such notice means that the claim is deemed valid. The claimant, if his claim is valid, should submit a fully detailed claim to the engineer. This detailed claim should contain:

- A detailed description of the event behind the claim
- The contractual and legal basis of the claim
- The project records (contemporary records) on which the claiming party relies
- Supporting particulars of claim

The supporting documents required to back the claim include what establishes the eligibility of the claim contractually and legally, and the methods used to quantify the requested compensation (Abdul-Malak & Abdulhai, 2017). The fully detailed claim should be sent within 84 days after the event or after the claiming party became aware

of the event. If the claimant fails to send the contractual and legal basis that back his claim, his notice of claim shall be considered as lapsed and will no longer be valid. The engineer should send a detailed notice to the claimant within 14 days after the expiry of the 84-day period for failing to send a fully detailed claim. The engineer, according to the roles specified in sub-clause 3.7, should consult the parties and allow a period for reaching agreement on the issue. If no agreement is reached within a period of 42 days after receiving a fully detailed claim, or both parties advise the engineer that no agreement will be reached, the engineer is then required, according to the same clause, to determine whether the claimant is entitled to the additional payment, reduction in contract price, extension of time, or extension of the Defect Notification Period within 42 days. In the case when the engineer fails to send a notice of determination within the stipulated time frames, the engineer is then said to be rejecting the claim and the issue can be referred to DAAB without issuing a notice of dissatisfaction. The parties and the engineer have a period of 14 days to correct a typographical, clerical, or arithmetical error. The engineer is required to send a notice of correction to both parties within 7 days of finding the error, stating the corrected agreement or determination or refusal of correction.

If a party is dissatisfied with the determination of the engineer, he should send a notice of dissatisfaction to both, the other party and the engineer, accompanied with the reasons behind this dissatisfaction. This notice should be sent within 28 days of receiving the engineer's determination. However, what is interesting in sub-clause 3.7.5 that focuses on dissatisfaction with engineer's determination, is that the dissatisfaction may be issued on parts of the determination thus leaving the remaining part to become final and binding.

3.2.1.1 Disputes under Clause 21

After being dissatisfied with the determination of the engineer, the DAAB is required, pursuant to clause 20, to act and issue a binding decision on the matter. The 2017 edition of the FIDIC Red Book requires the DAAB members (or sole member) to be appointed within 28 days of the date at which the contractor receives the letter of acceptance (unless another time bar is stated in the contract). If the parties do not agree on having a sole DAAB member, and it's not stated in the contract, the DAAB shall comprise 3 members. Each party chooses a member and the chosen members agree on the third one who acts as a chairperson of the board. The contract allows the parties, upon agreement, to appoint a qualified member instead of one of the members for any reason including member resignation. Upon failing to appoint board member(s), or a member replacing a resigned board member, the appointing entity named in the contract, and in consultation with the parties, appoints the member(s). The term of the board, according to the sub-clause 20.1, expires either by the project discharge or 28 days after issuing a decision on the last dispute between the parties, whichever is later. The parties may ask the DAAB to be present at all discussions, site visits, and informal meetings in order to help the parties settle any issue or disagreement before it evolves to a dispute. This dispute avoidance mechanism can be initiated at any time other than the time at which the engineer is working according to sub-clause 3.7 to issue a determination.

Referring the case to DAAB should be made within 42 days after issuing the notice of dissatisfaction. Failing to do so means that the notice has lapsed and is no longer valid. The parties are required to make all the related reports, documents, and sites accessible to the DAAB members. DAAB will issue a decision within 84 days following the case

referral. The decision shall be given in writing to the parties and the engineer with all the reasoning and legal and contractual basis. Failing to issue a decision within this period gives the right to the parties to issue a notice of dissatisfaction, which can also be issued if any party is dissatisfied with the DAAB decision, within 28 days from the expiry of the decision issuance period. Similar to the determination of the engineer, the party may be dissatisfied with part of the decision which makes the remaining part binding and final after the 28-day period elapses. The notice should state clearly the reasons behind this dissatisfaction and with which part.

After issuing the notice of dissatisfaction, the parties are allowed a period of 28 days for amicable settlement. However, and even if no attempt for amicable settlement has been made, arbitration can be commenced on or after the 28th day. A party may also refer the failure to abide by the DAAB's binding decision to arbitration even if the decision is not final yet. The whole procedure is described in the following dispute timeline (Figures 1 and 2).

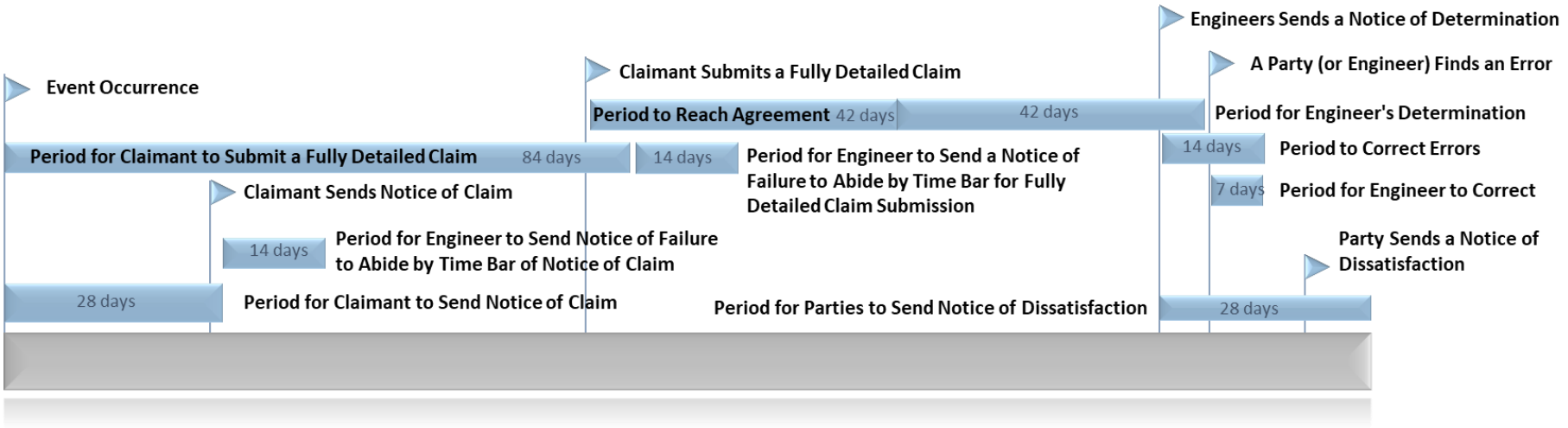

Figure 1 Claim Timeline under FIDIC 2017 Contract

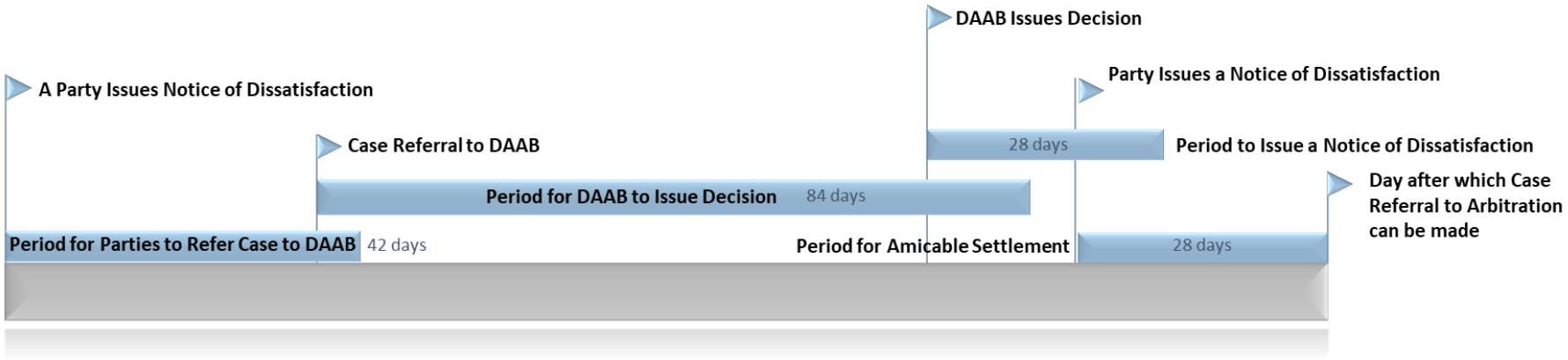

Figure 2 Dispute Timeline under FIDIC 2017 Contract

3.2.2 *Dispute resolution under NEC*

The first NEC contract was introduced in 1993. Contrary to the FIDIC, the NEC drafters preferred simplicity, clarity, and conciseness as complex and lengthy contracts were thought of as a source of conflict (Thompson et al. 2000). The roles and responsibilities of the parties were set with the least possible number of words per sentence (ICE 1991) as the main issue with the traditional contract was the uncertainties that arise from the amendments and long complex language (Love et al. 2010). The NEC contract drafters aimed to produce a clear and flexible contract that motivates the participants to implement effective project management (Murphy et al 2014).

3.2.2.1 NEC contract

As drafters focused on contract flexibility, they set nine core clauses and offered the users several main, secondary, and dispute resolution options from which they can choose what suits them. The nine core clauses assign the responsibilities and requirements of each party, specify the testing and quality control procedures, define payment and compensation policies and programs, and manage the termination process. The participants choose other optional clauses that are also essential to build the contract. These optional clauses are classified to main option clauses and secondary option clauses. The main option clauses are clauses designed for different types of contracts such as priced contracts with activity schedules or bill of quantities, target contracts with activity schedules or bill of quantities, cost reimbursable contracts, and management contracts. Other secondary clauses deal with performance and delay damages, price changes, law changes, bonuses, bonds, liability, and additional conditions of the contract. NEC also gives the project participants two options for dispute resolution through adjudication (Option W1 and Option W2). Option W1 can be

used on any project except for the projects that fall under the provisions of the UK's Housing Grants, Construction and Regeneration act 1996 for which the Option W2 is provided.

3.2.2.2 Steps before Adjudication under NEC contracts

Even if the project participants were aware of all the contractual obligations, requirements, and risk allocation, an issue can create a conflict between the parties. If this conflict is not properly managed, it can escalate to a dispute that has a notable impact on project progress and schedule. The NEC contract encourages effective project management by allowing the parties to jointly resolve any issues that occur on site before these issues escalate into claims and before relationships between the parties deteriorate. The clear way with which the NEC contract spells out the rights, obligations, and duties of every participant pushes them to work effectively and minimizes conflict occurrence.

The existence of a whole core clause that identifies and allocate different project risks among the participants (8^{th} core clause) allows the parties to prepare suitable procedures and approaches to mitigate the impacts of such potential risks. However, if an issue arises from one of these risks, the NEC contract has its own early notices and warning system (EWS), that guides the parties on how to deal with the issue in order to minimize the consequences and decrease the potential of conflict escalation to a dispute.

This escalation of conflict into a dispute can increase the total price of the project and cause a delay in the project schedule due to the work disruptions that result in a decline in workers' performance (NEC 2005). For this, the EWS will urge the parties to hold frequent collaborative onsite meetings in order to reduce the risk and manage the disputes effectively (Gould, 2006). Failing to reach an agreement on ending the disputes

through collaborative discussions, the NEC contract proposes another way to compensate for the losses that occur. The project manager or supervisor can issue a fair and rational decision on the matter in order to end the issue and limit its implications. As any party may be dissatisfied with the decision issued by the project manager or supervisor, the issue can be then referred to an adjudicator or adjudication board if all notice requirements and referral prerequisites. Resolving disputes through adjudication is regulated in the NEC contract through two options: Option W1 and Option W2. The adjudicator in both options revises any action or inaction by the supervisor or project management in relation to the issue and instructs the parties to submit additional data deemed important to decide the matter. In addition, all disputants must be copied in any communication done between a party and the adjudicator. The time bars and specific procedure of each option are summarized below.

3.2.2.3 Option W1

In Option W1, the claimant is obliged to send two main notices in order to have the right to refer the matter to adjudication following a denied request of extension of time or compensation after the occurrence of an event, as these notices are considered as condition precedent. The first notice is the notice of a dispute, which is sent by the claimant following an action (decision) or inaction by the project manager or supervisor for a quotation or compensation for an event. This notice should be sent within 4 weeks from the date the claimant becomes aware of the project manager's (or supervisor's) action or inaction. The contract leaves the parties two weeks in order to settle the dispute amicably. After these two weeks, another 2-week period is given to the claimant to issue a notice of case referral to adjudication.

If the adjudicator isn't named in the contract, and the parties seek an appointment from an adjudication nominating body (ANB) rather than choosing themselves, the ANB should appoint the adjudicator within 4 days from the request. The parties should agree on a new adjudicator if the appointed adjudicator resigns. The parties may also ask the ANB to assign another adjudicator which is done within 4 days. The replacement adjudicator has the same power of the resigned adjudicator in issuing decisions on undecided matters. The parties have a period of 4 weeks to send case particulars, data, and copies of related documents to the appointed adjudicator.

The adjudicator then issues a binding decision within a period of 4 weeks. The adjudicator can correct any clerical mistake or remove any ambiguity within two weeks from issuing the decision. If any party is dissatisfied with the adjudicator's decision, this party can submit a notice of referral of the dispute to a tribunal to the other party and the adjudicator within 4 weeks of decision issuance. After this 4-week period elapses without receiving notice of dissatisfaction, the decision becomes final. These time bars can be extended with the consent of the parties and the adjudicator. The parties can not refer the dispute to tribunal unless an adjudicator issues a decision on the matter or the stipulated time to issue a decision elapses without receiving a decision from the adjudicator. The tribunal has the power to settle the dispute and reconsider any decision issued by the adjudicator. However, a party cannot call the adjudicator as a witness on the dispute.

The whole process of resolving the dispute through Option W1 can be summarized in the timeline shown in Figure 3.

3.2.2.4 Option W2

While having most of the approaches and procedures of Option W1 repeated in Option W2, the contract, in this option, states that the parties can refer the dispute to the adjudicator at any time to issue a decision on the matter. The time bars in Option W2 are stated in days that exclude national holidays.

After issuing the notice of adjudication, the party who issued the notice should refer the case to adjudication within 7 days from the notice and include all the information deemed important to issue a decision. Any further information can be sent within a period of 14 days following the case referral. The adjudicator, after the case referral, has a period of 28 days during which he should decide the matter. The 2011 amendments to the NEC contract state that in case the decision of the adjudicator is to revise the amount due, the payment of the revised amount has to be made within 7 days of the adjudicator's decision or by the final date of payments (whichever comes later). The period within which the adjudicator can correct any clerical mistake was reduced from 14 days to 5 days from the date of decision issuance in the 2011 amendments. The adjudicator's decision is binding and becomes final if no party notifies the other party that they intend to refer the case to the tribunal within 28 days of the decision. The main requirements and procedures of Option W2 are summarized in the following timeline (Figure 4).

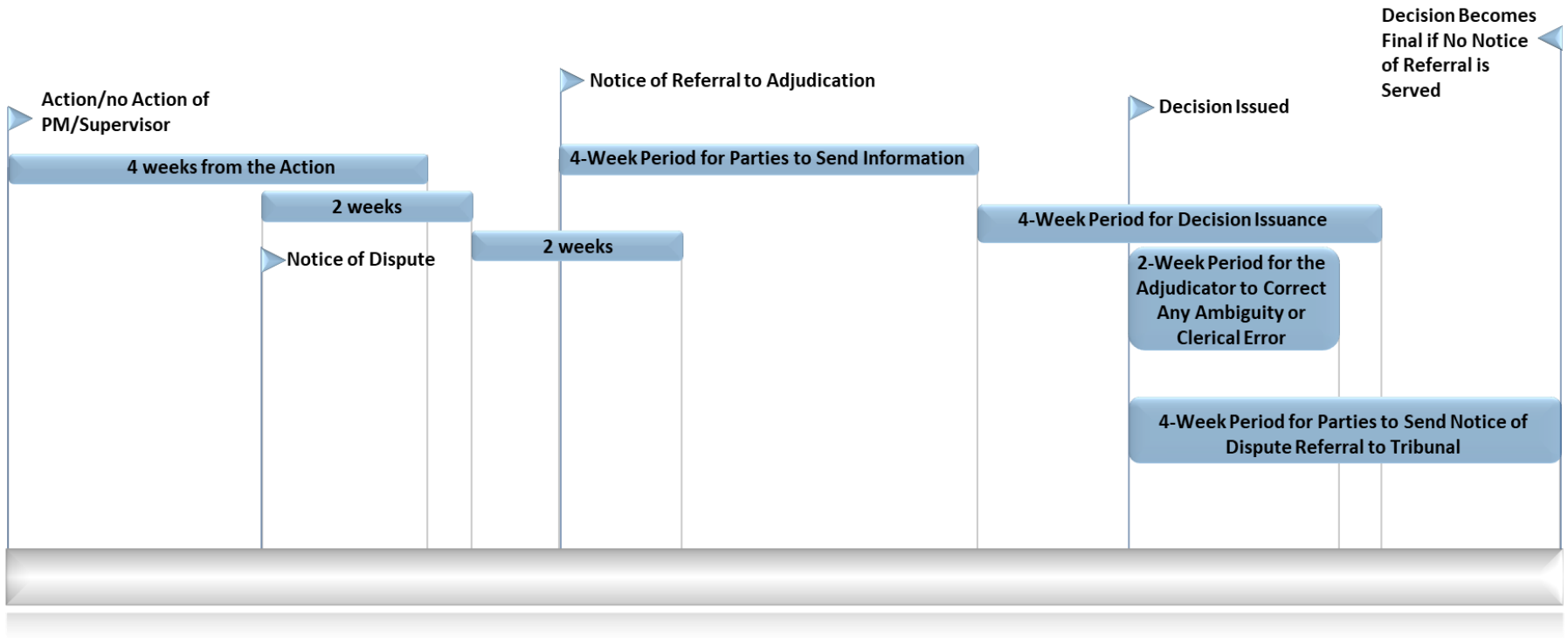

Figure 3 Timeline of Adjudication under NEC3 Contract Option W1

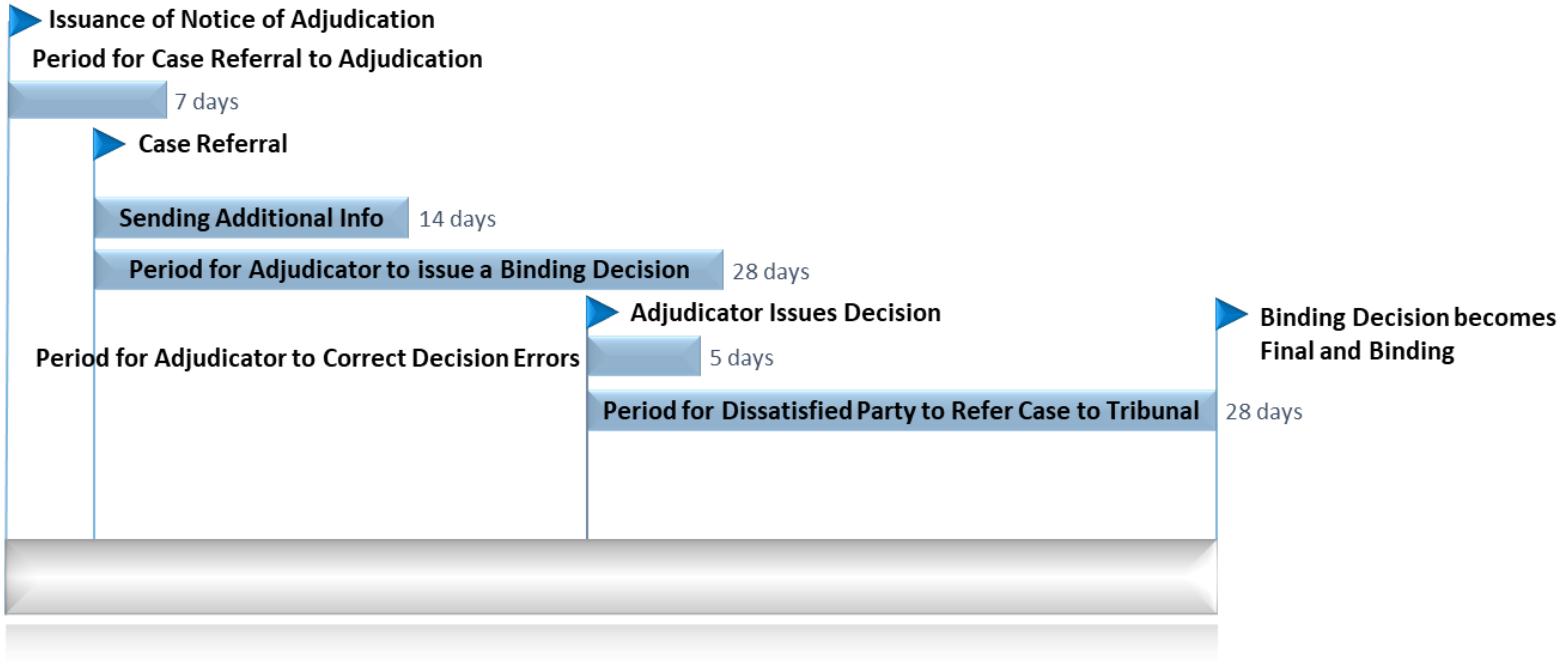

Figure 4 Timeline of Adjudication under NEC3 Contract Option W2

3.2.3 *Dispute resolution under JCT 05 Contract*

The Joint Contracts Tribunal (JCT), and since its establishment in 1931, has published standard forms of contracts, guides for project participants, and other standard documents relevant to the construction industry (Taylor, 2008). The contract is drafted in sections in order to enhance its usability and make it more user-friendly. The JCT contracts' sections were standardized to contain sections that spell definitions, work guidelines and procedures, payment rules, measurement and evaluation techniques, termination process, and dispute settlement methods.

3.2.3.1 Claim process under JCT 05 contract

Clause 13 of the JCT spells out the procedures and guidelines for correspondences between the architect and the contractor. In sub-clause 13.2, the contract requires the contractor to notify the initial decision maker (architect or contract administrator) of any loss and expense as soon as it is detected. Having no clear timeframe for this notice allows the parties to debate if the notice was sent at the right time or late with all the difficulty to assess its implication on the schedule and budget at its occurrence. This would result in having the decision maker overwhelmed with notices sent by the contractor to save his right. The contractor should supply enough information and evidence that allow the architect to form an opinion on the case. However, this is done upon being requested to do so by the decision maker following submitting the notice. After forming an opinion, the decision maker has to notify the contractor of any granted extension of time or additional money. The matters that give rise to entitlement range from late possession of site, instructions and variations, discrepancies in contract documents and design drawings, omissions, and other related matters. The claim evolves into a dispute after not being admitted. After that, the claimant can refer the

case to adjudication and the adjudicator should be appointed within 7 days from the notice of referral. The parties may agree on nominating an adjudicator. However, in case they fail to do so, the JCT 05 contract specifies several Adjudication Nomination Bodies for adjudicator nomination such as the Royal Institute of British Architects (RIBA), the Royal Institution of Chartered Surveyors (RICS), the Construction Confederation, the National Specialist Contractors Council, and the Chartered Institute of Arbitrators (CIArb) that may nominate the adjudicator for the disputants. The nominated adjudicator issues his decision within 28 days of the referral or any period the parties agreed on in the contract. If the parties agree, the adjudicator can extend this period by a period of 14 days. The decision of the adjudicator is binding until the matter is referred to an arbitrator (Figures 5, 6, and 7).

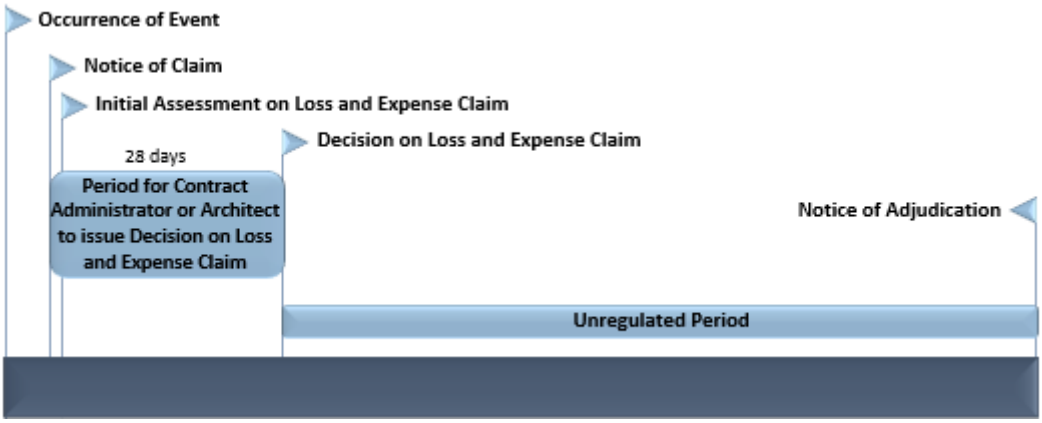

Figure 5 Timeline for Loss and Expense Claim JCT Contract

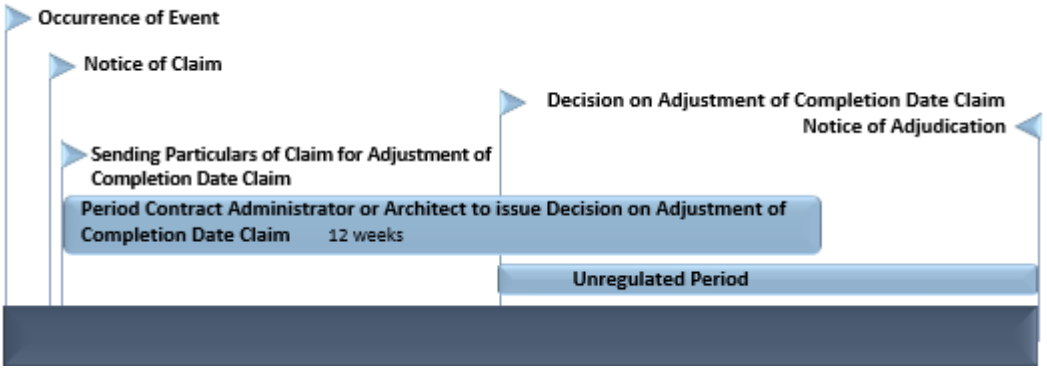

Figure 6 Timeline for Adjustment of Completion Date Claim JCT Contract

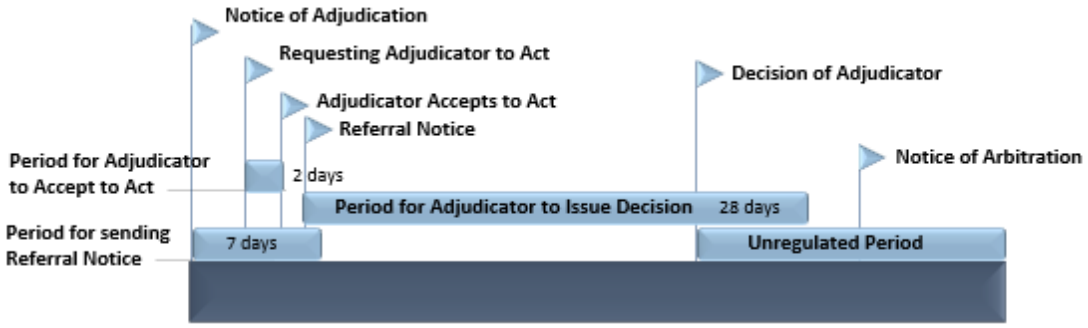

Figure 7 Adjudication Timeline under JCT Contract

3.3 Comparison of Adjudication Timelines

In the three contracts, the adjudication process should be preceded with different notices and a notice of dissatisfaction with the decision or determination from an initial decision maker. These notices and decision are considered condition precedent to the commencement of adjudication as failing to issue these notices will result in losing the right to take the case for adjudication. In addition, courts normally deny claims without looking at its merits due to the claimant's failure to comply with the stipulated notice time bars (Miletsky, 2001). In FIDIC, referring the case to Adjudication is a four-step

process that requires the claimant to send a notice of claim and wait for the engineer's determination. The claimant has then to send a notice of dissatisfaction with the engineer's determination to be able at last to refer the case to DAAB. On the other hand, referring the case to adjudication in NEC contract is a five-step process in both Options, W1 and W2. The claimant has to send a notification of the compensation event followed by an assessment or quotation. After receiving the reply of the project manager and being dissatisfied with it, and under Option W1, the claimant sends a notice of dispute to the owner and project manager followed by referring the case accompanied with supporting documents to the adjudicator. In Option W2, the claimant has to send a notification of adjudication, wait for the reply and approval of the adjudicator, and refer the dispute to the adjudicator accompanied with supporting documents. Similarly, in the JCT standard contract, the claimant has to follow a five-step procedure to refer the case to adjudication. The claimant has first to send a notice of claim to the contract administrator or architect (the initial decision maker) followed by case particulars in the adjustment of completion date claims and initial assessment in the loss and expense claims. The claimant, and after being dissatisfied with the decision of the initial decision maker regarding the extension or ascertained amount, issues a notice of adjudication followed with a request to the adjudicator to act. After the adjudicator's acceptance to act, the claimant then should send a referral notice accompanied with case particulars. All the referrals, notices and requests have to be sent within the timeframes stipulated in the used contract. The adjudicator's decision, under the three contracts, is considered binding and enforceable by law. It is noticeable that the duration given to the adjudicator to issue the decision varies between the three contracts. The adjudicator issues the decision within 84 days of the referral of the case to adjudication under

FIDIC contracts while he's given 28 days only to do the same job under NEC and JCT contracts. The table below (Table 1) summarizes the major milestones and notices required in these standard forms of contracts prior to the adjudication technique. The adjudication rules, appointment of adjudicators, decision type (a binding decision that becomes final and binding), and effect of party's dissatisfaction with the adjudicator's decision are similar to those presented by the International Chamber of Commerce (ICC). However, ICC calls for a board of adjudicators to be formed strictly at the start of the project (after contract signature) if the parties don't agree on a sole adjudicator.

Table 1 Summary of Number of Steps in each Contract

Contract	**Number of Steps**	**Major Milestones and Decisions**				
FIDIC	4	Notice of Claim	Decision from Initial Decision Maker	Dissatisfaction with Engineer's Determination	Referral of Case to Adjudication	
NEC	5	Notice of Compensation Event	Action (or No Action) from Initial Decision Maker	Notice of Dispute	Notice of Referral to Adjudication	Referral to Adjudication
JCT	5	Notice of Claim	Initial Assessment	Decision from Initial Decision Maker	Notice of Adjudication	Request for Adjudicator to Act

CHAPTER IV:

ADJUDICATION IN PRACTICE: UK ADJUDICATION CENTERS

4.1 Preamble

Arbitration was the preferred dispute resolution technique in the Construction industry of the United Kingdom until adjudication was introduced in the Housing Grants Construction and Regeneration Act in 1996 (Dancaster, 2008). Following adjudication's introduction in the act and in common standard construction contracts in this region such as JCT and NEC, a United-Kingdom-wide Adjudication Reporting Centre (ARC) at the Glasgow Caledonian University was established in 1999 to publish annual reports on data collected from adjudication nominating bodies and a sample of practicing adjudicators. Since 2012, the Adjudication Society supported publishing the subsequent reports including the latest report covering the 2017 year published in 2018. These reports allowed for meaningful comparisons between the changes that occurred in adjudication procedures, results, and timeframes during the last 20 years.

Adjudication nominating bodies and practicing adjudicators were asked to fill detailed questionnaires that cover all the aspects of this alternative dispute resolution method. The number of responding adjudication nominating bodies (ANBs) who provide adjudication services across the United Kingdom and Scotland increased from 15 in 1999 to 22 in 2018.

4.2 Preparing the Data

The first step was to form a complete set of data out of the annual reports published by the Adjudication Reporting Centre of the Glasgow Caledonian University and the Adjudication Society through connecting the numbers of similar headings of each year and filling them in one table (Figure 8). For this, an excel file was created with a sheet representing each of the studied aspects which yielded to 16 excel sheets (Figure 9).

	Years									
	2000	2001	2002	2004	2005	2007	2008	2011	2012	Av
<£75	10.40%	11.50%	8.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.30%
£75 - £100	57.30%	53.10%	40.00%	35.70%	14.30%	0.00%	0.00%	0.00%	0.00%	22.30%
£101 - £125	22.90%	20.80%	31.00%	17.90%	28.60%	14.30%	25.00%	12.80%	0.00%	19.30%
£126 - £150	0.00%	4.20%	8.00%	35.70%	21.40%	28.60%	25.00%	15.40%	5.60%	16.00%
£151 - £175	7.30%	4.20%	4.00%	3.60%	17.90%	10.70%	28.60%	28.20%	22.20%	14.10%
£176 - £200	0.00%	4.20%	6.00%	0.00%	0.00%	3.60%	7.10%	30.80%	38.90%	10.10%
>£200	4.20%	2.10%	3.00%	7.10%	3.60%	3.60%	3.60%	12.80%	33.30%	8.10%

Figure 8 Example of the Collected Data

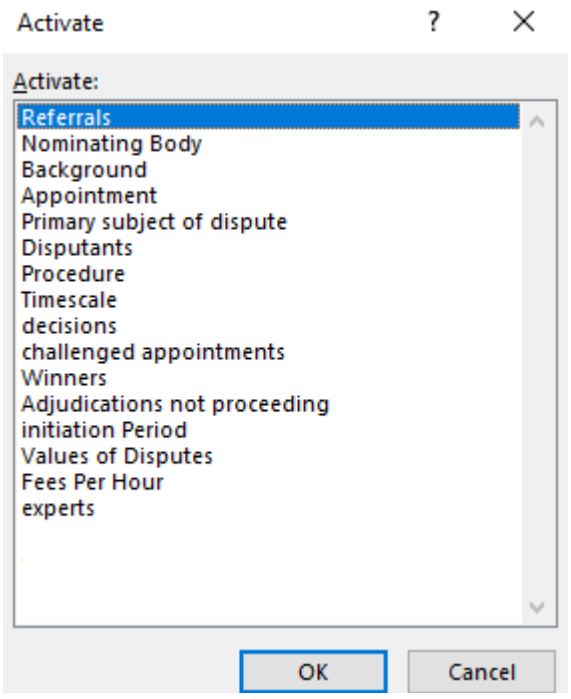

Figure 9 The Created Excel Sheets for the Data

Such work needed accuracy and preciseness in collecting, filling, and correcting the data due to the huge number of referred cases (around 28000 cases), the numerous headings the data consists of, the different ways with which the data was represented (percentages or whole numbers), and the different titles used for the same subject in different reports. As each report was considered as a summary of the year that shows the state of each aspect of the adjudication technique in numbers in addition to the previous year or two, the tables had to be checked as a whole after collecting the data of all the years in order to detect any additional outliers or errors.

After forming a correct and accurate set of data, various types of charts were used to represent each of the following aspects of the adjudication technique: Referrals, Backgrounds of Adjudication Nominating Bodies and Adjudicators, Initiation Periods, Primary Subject of the Dispute, Involved Parties in the dispute, Values of the Referred Disputes, Procedures Adopted, Assigned Experts, Timescales, Outcome of the Adjudication Technique, Challenged Appointments and Filed Complaints, Reasons for Abandoned Processes, and Winners of Adjudicator's Decision.

4.3 Referrals

As the shortlisted ANBs in standard contracts are considered trustable entities with enough technical knowledge, disputants solicit the help of ANBs to nominate an adjudicator whose technical expertise and experience coincide with the subject of the dispute. The number of referred cases to the ANBs to nominate fluctuated following implementation of the HGCR Act in 1998. However, the number of referrals remained in the last 3 years around the 20-year average (1474 referrals) (Figure 10). It is generally understood that during recessions, disputes increase as parties involved strive to secure payments and try to get as much profit as possible in order to limit the losses

and pay overhead expenses while waiting for a new project. Inversely, the number of referred cases decrease during a construction boom.

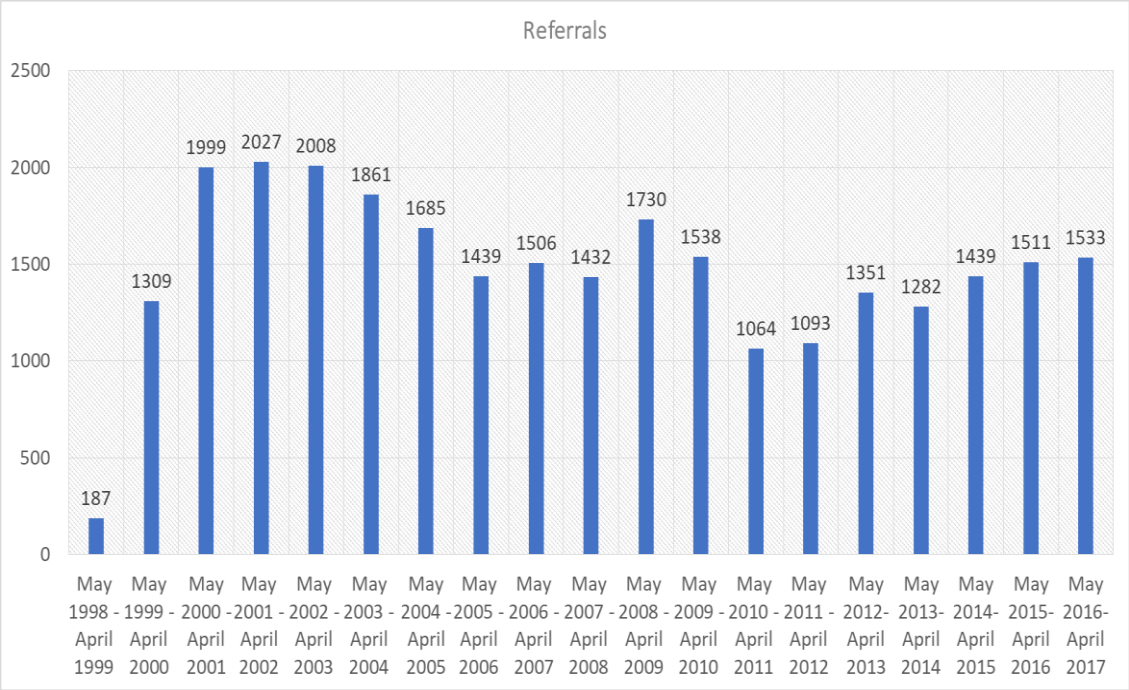

Figure 10 Referrals to ANBs across the Years

However, it's noticeable that the number of referrals decreased with the dramatic increase in the adjudicator's hourly fees (Figure 11). In almost 89% of the referred cases, the adjudicators in the year 2000 charged the disputants between £75 and £125 per hour. In the April 2013 report covering the 2012 year, no adjudicator charged an hourly fee below £125. In one-third of the cases referred during the year 2012, the adjudicators charged the disputants an hourly fee greater than £200. In the first few years of implementing adjudication, ANBs and nominated adjudicators tended to ask for low fees in order to attract disputants to use this new alternative dispute resolution technique. Also, the change or British Pound purchasing power during the 20-year

period cannot be neglected as the normal hourly fees change accordingly and so do the materials' prices.

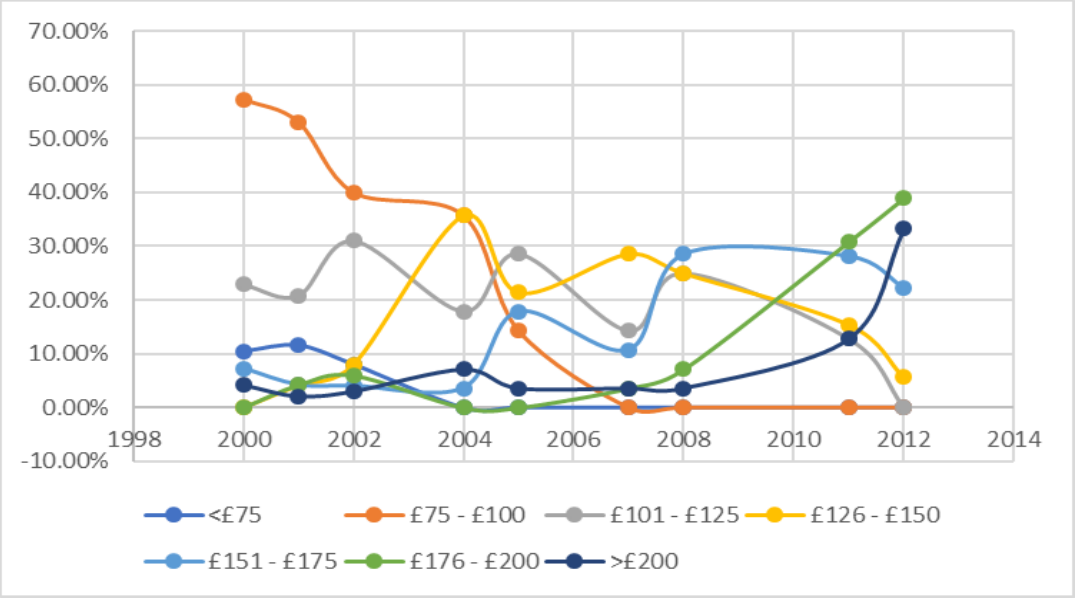

Figure 11 Distribution of the Charged Hourly Fees by the Adjudicators

4.4 ANBs Backgrounds

If adjudicators were neither named in contract documents nor agreed on between the parties, disputants ask ANBs to nominate an adjudicator or adjudication board members upon failing to reach an agreement on a matter. ANBs are usually named in contracts and classified according to the type of dispute. According to the collected data, ANBs are the source of appointment of adjudicators in more than 80% of the cases followed by the agreement of parties on the adjudicators then having them named in the contract (Figure 12). This means that most of the nominated adjudicators are contacted only when the dispute is referred to adjudication (ad-hoc) rather than being on board from the contract signature to be aware of all incidents, prevent disagreements from escalating to disputes, and give recommendations.

These ANBs were of various backgrounds that include Architecture, Dispute Resolution (Adjudication, Arbitration, and Law), Engineering (Civil, Chemical, Electrical, Mechanical, Structural, and Surveying), and Management Consultants (Table 2).

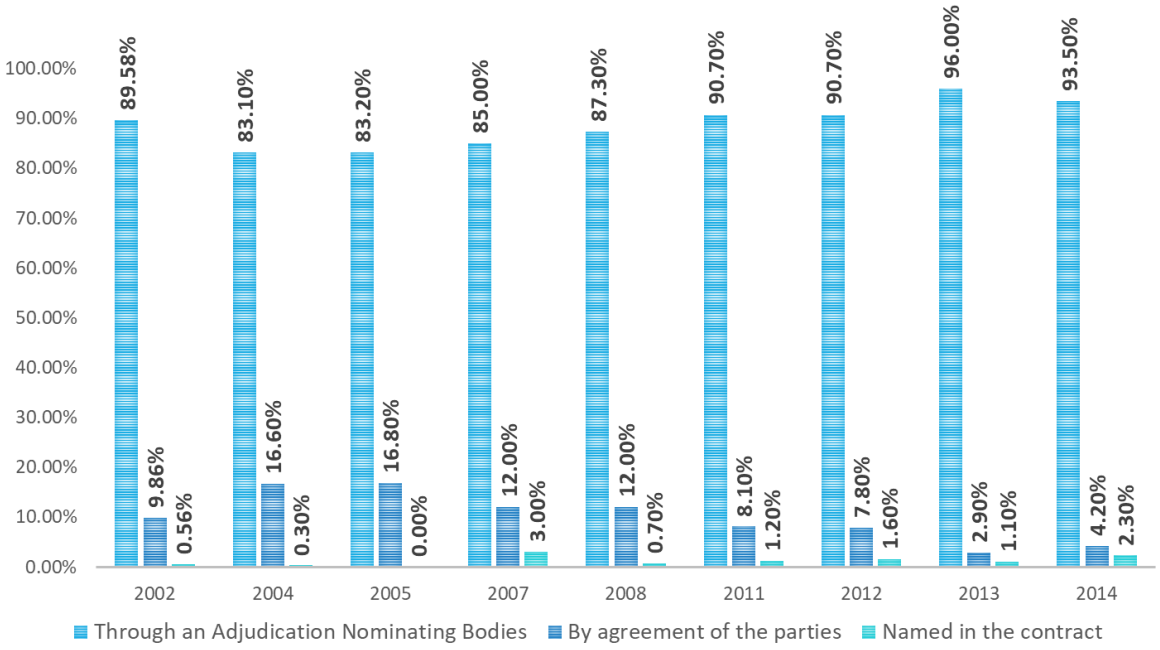

Figure 12 Source of Adjudicators' Appointment

Table 2 Background and Total Number of Nominations of the ANBs between 1998 and 2017

Adjudication Nominating Body	Background	Total Appointments (1999-2017)
Academy of Construction Adjudicators	Technical	1604
Chartered Institute of Arbitrators	Legal	2401
Confederation of Construction Specialists	Technical	412
Construction Industry Council	Technical	1949
Institution of Chemical Engineers	Technical	224
Institution of Civil Engineers	Technical	1339
Royal Institute of British Architects	Technical	1259
Royal Institution of Chartered Surveyors	Technical	2056
3A's (Polycon AIMS Ltd)	Technical	195
Institution of Mechanical Engineers	Technical	18
Chartered Institute of Building	Technical	792
Construction Confederation	Technical	436

Scottish Building Employers' Federation	Technical	188
The Royal Incorporation of Architects in Scotland	Technical	252
Royal Institution of Chartered Surveyors in Scotland	Technical	517
Centre for Dispute Resolution	Legal	634
Institution of Electrical Engineers	Technical	20
Technology and Construction Solicitors Association	Legal	1979
Chartered Institute of Arbiters (Scottish Branch)	Legal	294
The Law Society of Scotland	Legal	234
Technology and Construction Bar Association	Technical	886
Adjudication.co.uk	Technical	129
TOTALS		**17818**

The background distribution of ANBs according to the number of nominations during the last 20 years show that the disputants contact ANBs of three different backgrounds: Quantity Surveying and Management, Law, and Engineering (Figure 13). The nature and merits of the referred dispute, in addition to the title of the disputants, control the background of the solicited nominating body.

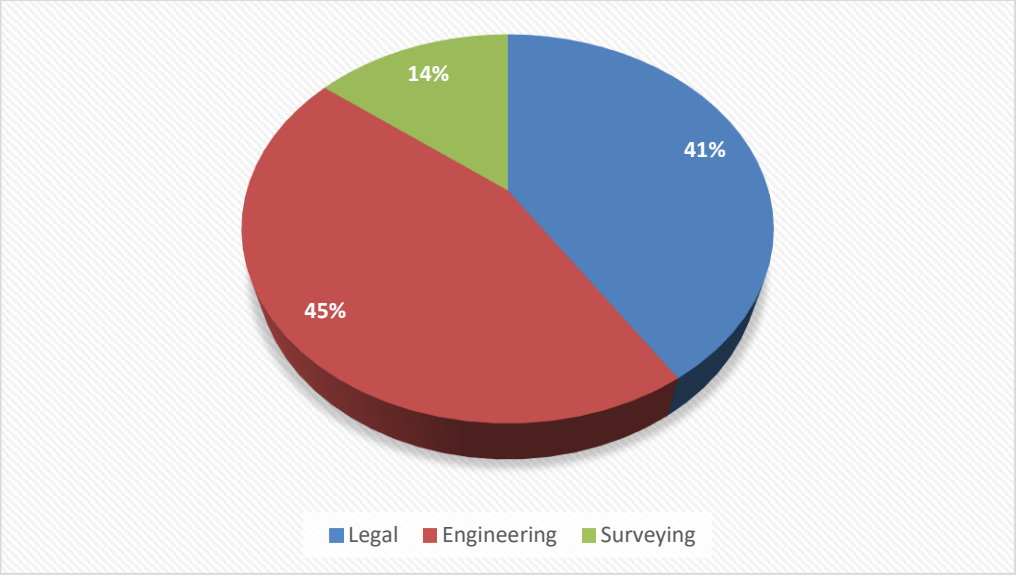

Figure 13 Background of ANBs during the Last 20 Years

4.5 Background of Adjudicators

As disputants seek the help of a specific ANB according to the dispute's nature, ANBs study the dispute in order to select the most suitable adjudicator(s) profile. The nominated adjudicators were of different backgrounds including Quantity and Building Surveyors, Architects, Construction and Project Managers, Lawyers, Construction Consultants, and Engineers (Figure 14).

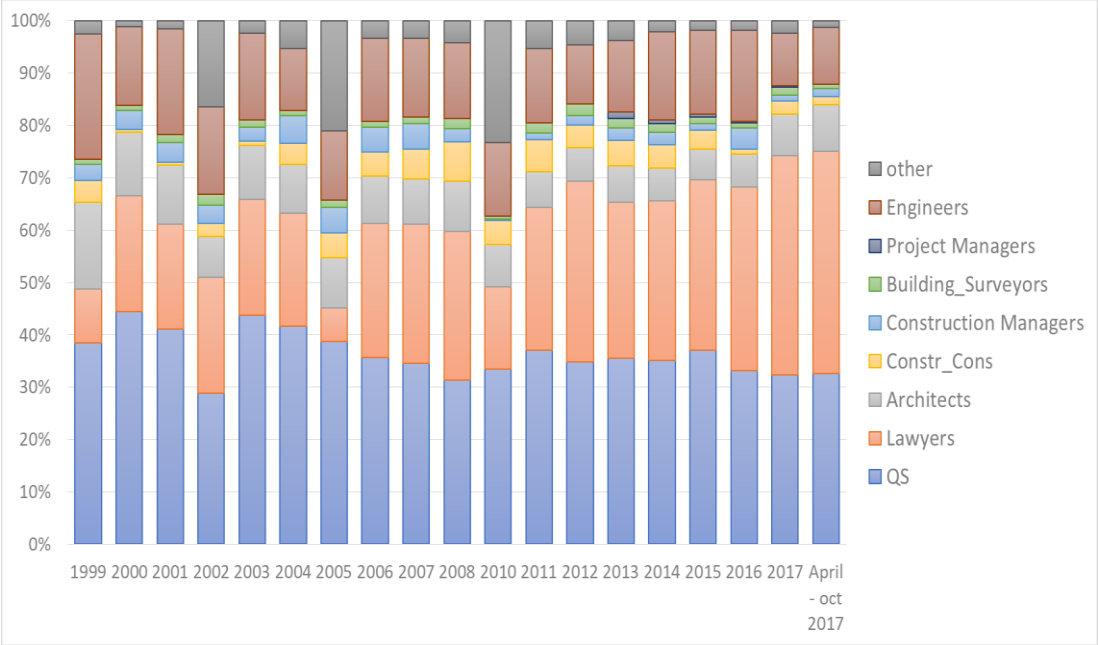

Figure 14 Background of Nominated Adjudicators between 1998 and 2017

The adjudicators' backgrounds can be further categorized into three main categories: Engineers and Architects, Lawyers, and Surveyors (Figure 15). Categorizing the backgrounds into these three fields shows that the adjudicators were, on average in the last 20 years, distributed almost equally over these three main categories.

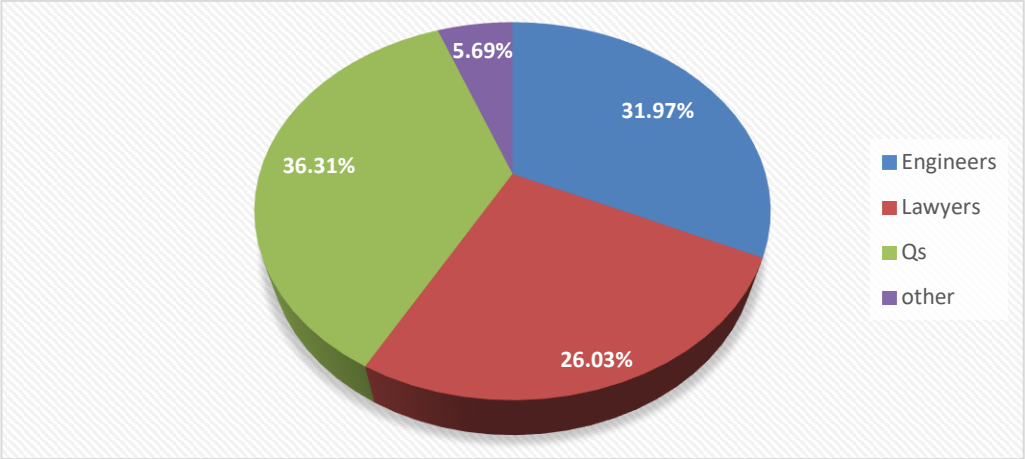

Figure 15 Main Categories of the Adjudicators' Backgrounds

4.6 Initiation Period

In almost 81% of the cases referred to adjudication, the referral was made after practical completion. The claimant may collect several disputes and refer them in a single file to the adjudication body after fulfilling all the contractual notice obligations. This may happen when the claimant expects the respondent to compensate during subsequent parts of the project and allows for alternative dispute resolution techniques to take place in order to reach a settlement without ruining work relationships. Such settlement may save the disputants money and time they may spend in solving the dispute through litigation or arbitration. The amicable settlement may happen anytime which may lead the disputants to abandon the adjudication process if commenced. Also, the continuous effect of the event that triggered the claim may push the claimant to fulfill the contractual notice requirement and wait until the effects can be quantified. Moreover, different contracts with different time bars that regulate dispute resolution were used in these cases which also explains the high percentage of cases referred after practical completion. For example, JCT contracts leave the claimant the option to refer the dispute to adjudication at any time. Disputants may also package as many disputes into

one file by the end of works in order to pay for one referral to adjudication process rather than paying for several referrals during the construction period.

4.7 Primary Subject of the Dispute

As the ANBs nominate an adjudicator (or adjudication board) according to the referred dispute, the nominated adjudicator(s) should have adequate knowledge in the dispute subject field. The primary subjects of the dispute include payment issues (final account payment, interim payments, withholdings, value of work, and non-payment), technical issues (variations and defective work), contractual issues (extension of time, provisions, repudiation and termination, and liquidated damages), and other subjects (Figure 16).

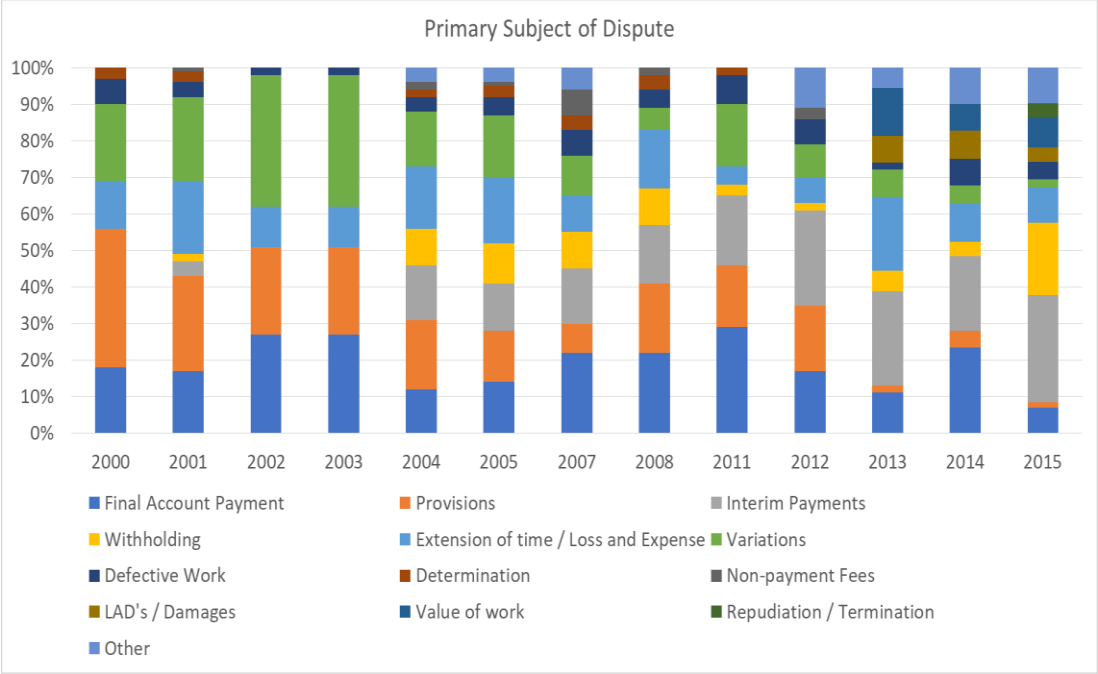

Figure 16 Primary Subject of Referred Disputes

A dispute may contain several interconnecting subjects. For example, assessing defective work is a technical issue while calculating the reasonable extension of time

due to the rework needed needs contractual, technical, and financial knowledge. Thus, understanding the dispute is key in nominating an adjudicator who's capable of issuing a fair decision with minimum possibility of either party challenging it.

4.8 Involved Parties in the Dispute

Different contractual relationships are found in every project. The type of contract and project organization chart allow for different combinations of direct and indirect relationships between participants. The adjudicator should be able to notice the existence of direct contractual relationships and obligations between the parties and indirect relationships and obligations as such information govern the way with which the parties communicate and thus the claims and disputes that arise. The adjudicator can build a better understanding of the dispute with such information as different project participants have different goals, working techniques and capabilities, and financial capabilities. As expected, the main sources of disputes in average, during the last 20 years, are claims raised by the subcontractor (sub) on the main contractor (MC) (48.70%) and claims raised by the contractor on the client (31.83%) (Figure 17). This is expected as most of the raised disputes revolve around payment and evaluation of work which is the main procedure that is regulated in the contract between the client and contractor, and the main contractor with the sub-contractors. The high difference between the number of disputes caused by a claim raised by higher tier on lower tier (6.3%) compared to those raised by lower tier on higher tier (93.7%) is normal since the weaker side (lower tier) aims to get the benefits available with the strong one (higher tier). However, the number of disputes caused by sub-subcontractors on subcontractors is not as big as other similar cases. This can be explained by the present low contract

prices between sub-subcontractors and subcontractors, lack sophistication in sub-subcontractors' organizational structure, and their need to grow and survive rather than to claim and have disagreements.

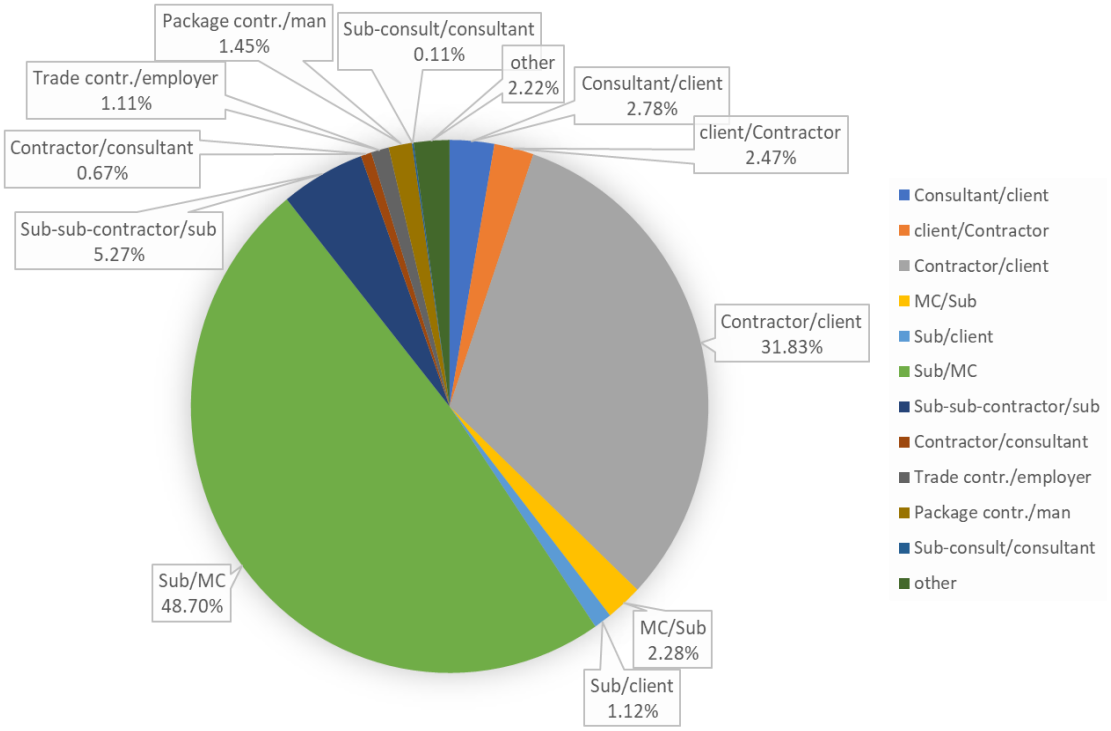

Figure 17 Parties Involved in Disputes

4.9 Values of Referred Disputes

Half of the cases referred to adjudication represent claims with small sums. Around 41% of the referrals were cases with dispute value being less than £50k. The main reason is that the contract price between the claimant and respondent is small as in the cases where a subcontractor is referring a case with the main contractor to adjudication, which characterizes half of the referred cases (Figure 18). Additionally, the referred cases to adjudicators in a project may be categorized by specialty which forms packages of disputes of smaller sums.

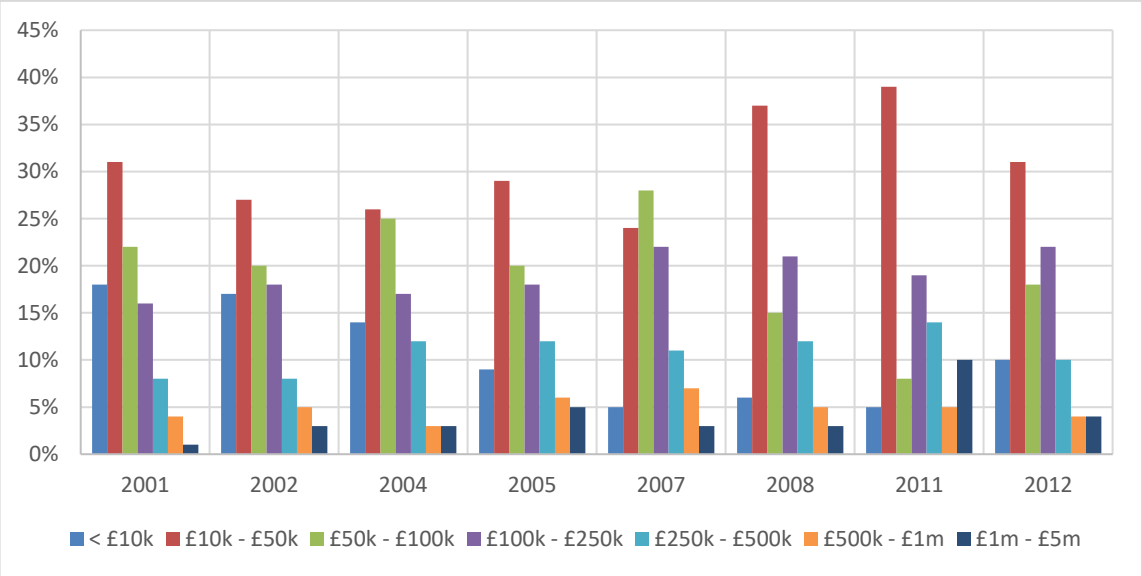

Figure 18 Values in Dispute of the Referred Cases

4.10 Procedures Adopted

As the disputants are usually required by contract to send all the information and records related to the issue within a short period following the referral, the adjudicator may need additional information to understand the dispute and assist the decision to be taken. Such data cannot be reached without using one or a combination of the procedures used generally in formalized dispute resolution techniques. In average, adjudicators tend to use the provided documents solely as the source of information (61%). Adjudicators can ask for 2-party meeting to debate contradicting information, explanations, or points of view. 1-party meeting and full hearing or conference calls are also used to gather more information or get explanations. Site visits may be also essential in order to assess what's present on site in relation to the dispute merits. Legal debates between the legal representatives of the disputants may also be beneficial as the adjudicator can then understand the way with which each party reads the related

contractual clauses (Figure 19). As most of the disputes are referred to adjudication after the completion of works, site visits are rare.

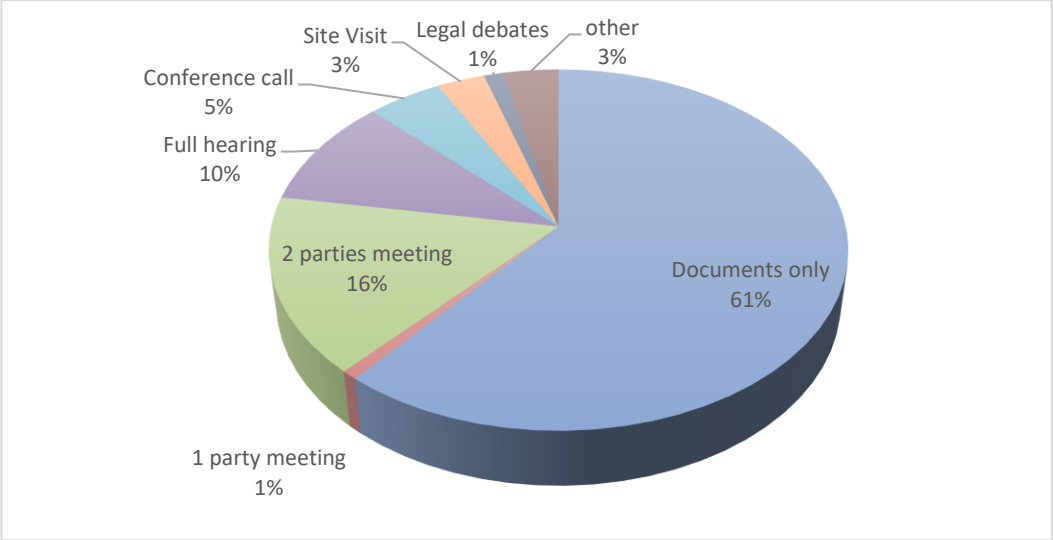

Figure 19 Average Distribution of the Procedure Adopted by the Adjudicators between 1998 and 2018

4.11 Experts Assigned as Advisors for Adjudicators

In some cases, the dispute may be composed of interdisciplinary subjects that aren't all within the area of expertise of the adjudicator or adjudication board members. Thus, the assignment of an expert to aid the adjudication body in assessing some aspects of the dispute is deemed vital so that they sustain the ability to issue a valid unchallengeable decision. Although the available data of the years 2000 till 2004 showed that the number of nominated lawyers to act as adjudicators exceed 40% of all the nominated adjudicators, most of the appointed experts in each year were lawyers in addition to few engineers, surveyors, and other experts of various technical fields (Figure 20).

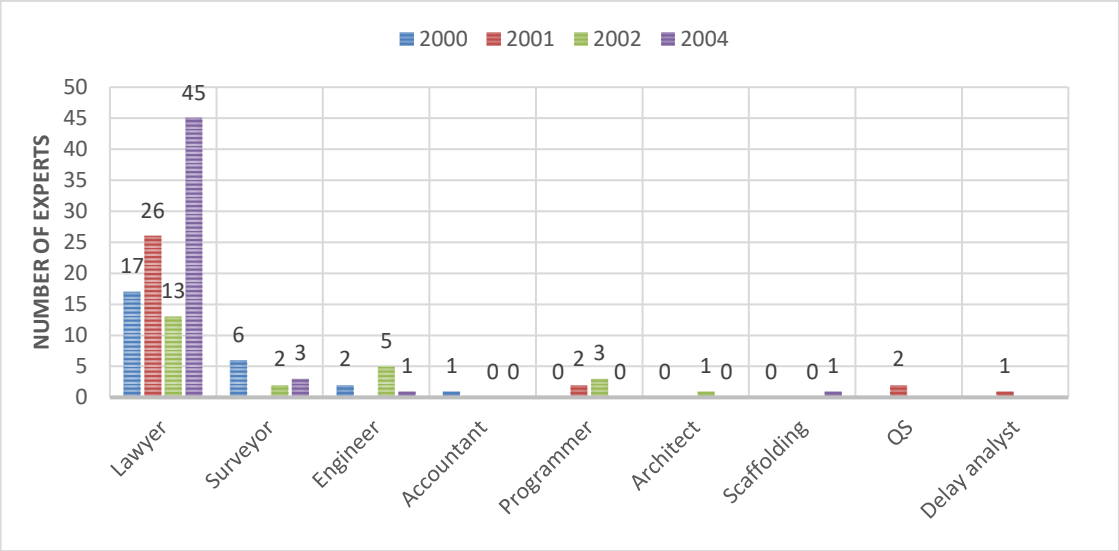

Figure 20 Experts Assigned as Advisors for Adjudicators

4.12 Timescale

Although standard contracts stipulate the duration of the adjudication process, amended standard contracts and other contracts may allow more flexibility. Figure 21 shows that the adjudication process in more than half of the referred cases was concluded within 28 days (55%), which is the duration of adjudication in the standard contracts used in the UK such as JCT and NEC. While it took between 28 to 42 days in around one-third of them (33%) and more than 42 days in 12% of the referred cases, this may be due to contract addenda or requests from adjudicators for extra-duration to render a decision.

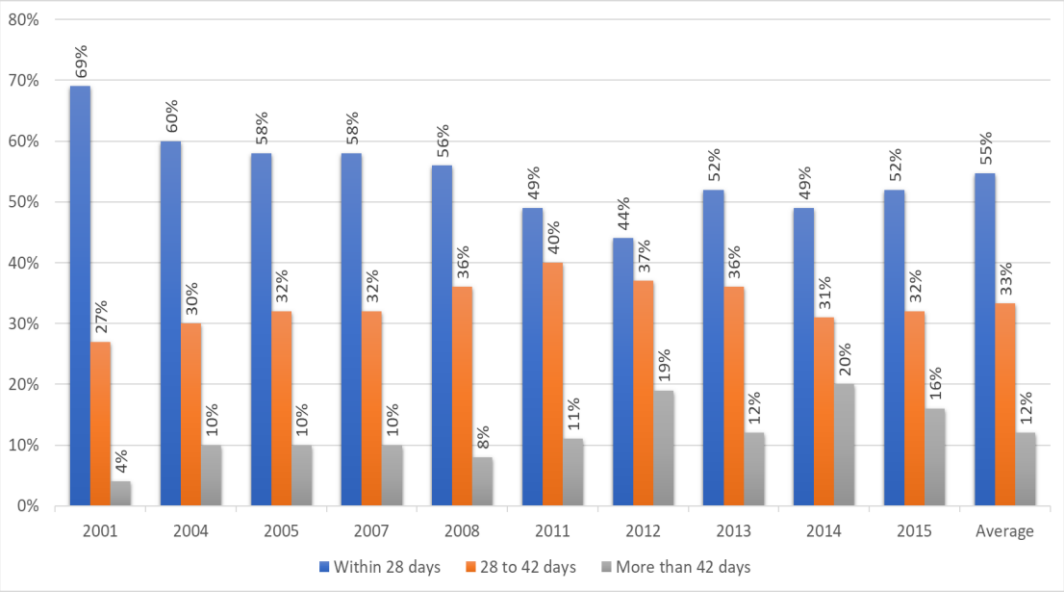

Figure 21 Time Needed to Conclude Adjudication Process

It's visible that the percentage of adjudications taking more than 42 days has increased significantly since 1998. This may be due to the increased faith of parties in the adjudication process and adjudicator(s) abilities to render a fair decision as the contractually stipulated period may be increased with the consent of the involved parties. The disputants may be open to increase this duration to avoid the implications of abandoning the process and escalating the matter to arbitration or litigation. The dispute complexity, size, and value may influence the time needed by the adjudicator(s) to render the decision.

4.13 The Outcome of the Adjudication Process

In most of the cases, the disputants reach a level of tension at which no amicable settlement is possible. This explains the high percentages of decisions issued by adjudicators (a 66% 20-year average). Some parties also tend to wait for the result of adjudication to know if there's any chance to negotiate a better deal with fewer losses

that may include other ongoing claims. Other parties try to settle the dispute amicably while continuing the adjudication process to try reaching a deal (a 19% 20-year average of the referred cases) while fulfilling the contract requirements. A low percentage of 4% of the 20-year data averages shows that the dissatisfaction with the adjudicator's procedure, time used, and professionalism is minimal. In all cases, the data shows that the disputants have faith with this process and with the adjudicator's ability to issue a fair decision (Figure 22).

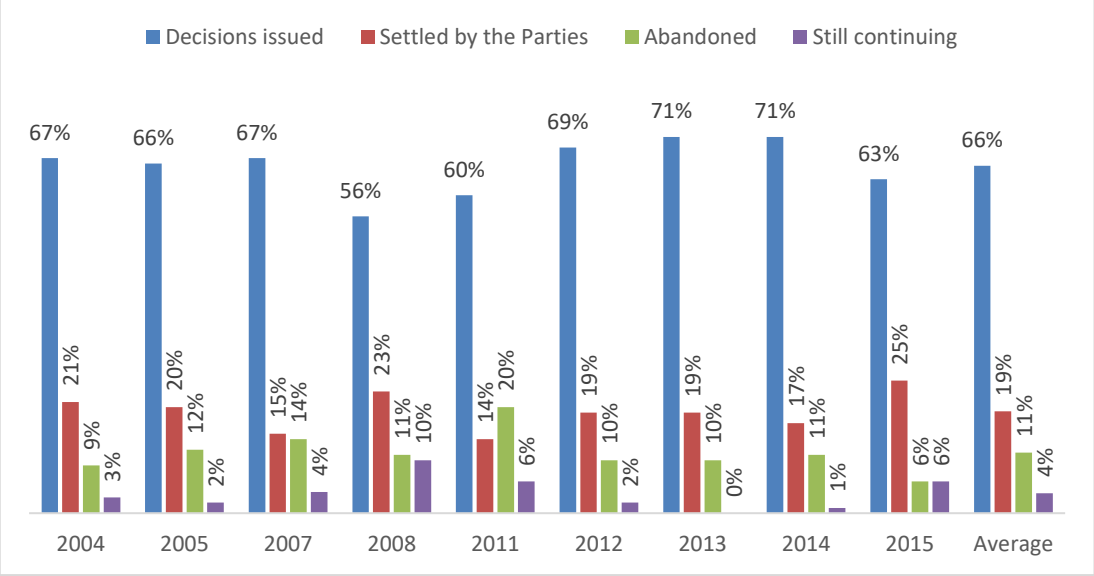

Figure 22 Adjudication Outcomes

4.14 Challenged Appointments

Parties may challenge the referral of a claim to an adjudicator by another party mainly due to not acknowledging the existence dispute, or what's called "No Dispute Crystallized". This may also happen if a party doesn't agree with an appointed adjudicator. The available data shows that challenging an appointment is considered normal in the dispute resolution sector (30% in average - Figure 23).

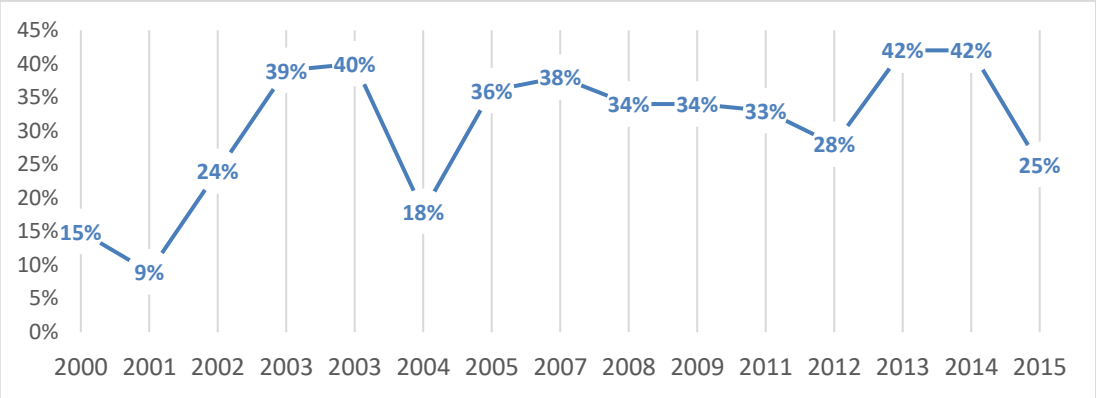

Figure 23 Challenged Adjudicator Appointment between 2000 and 2015

The respondent may use this technique to buy time even if he knows that the other party has the right to claim and refer the case to adjudication. The reason behind this is to buy his team of lawyers, accountants, and technical advisors time to assess the claim and get an idea of his chances to win the case and the possibility to offer the claimant a deal with fewer losses.

4.15 Filed Complaints

The number of complaints made to ANBs against adjudicators had a sharp increase between 2010 and 2011 to represent 2.5% of the referred cases. However, the complaints upheld decreased from 0.21 % in 2004 to 0% in 2010 and 2011 (Figure 24). This small percentage of issued complaints throughout the years shows that either the disputants don't know the adjudication process and want to complain against or they fully trust the way with which the adjudicators issue decisions. A negligible percentage of these complaints were upheld by the ANBs which means that even with the small percentage of complaints, these complaints didn't satisfy complaints rules or weren't backed with enough evidence thus they were dismissed.

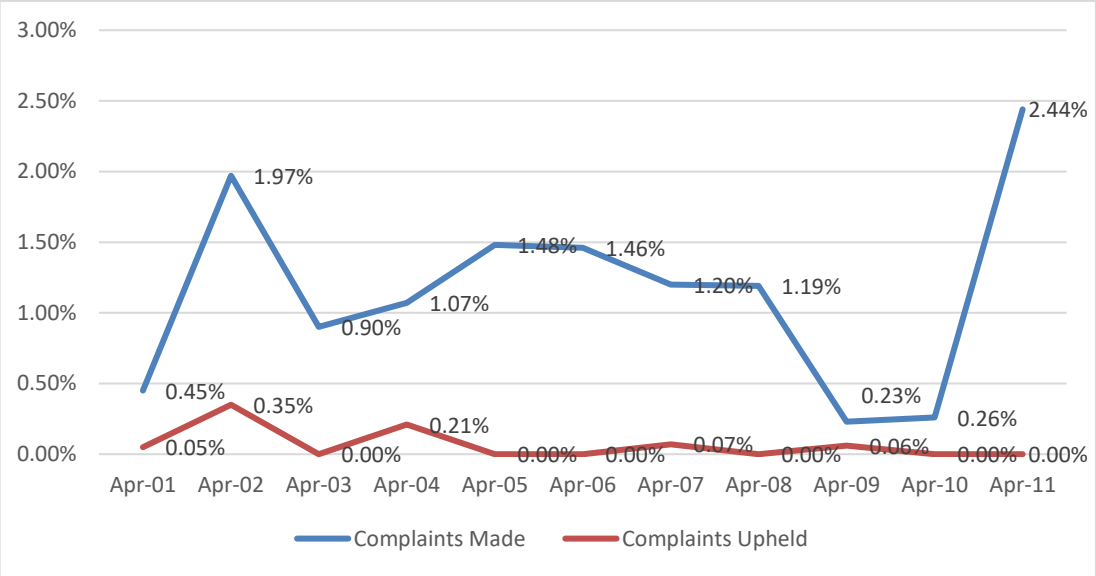

Figure 24 Filed Complaints against Adjudicators

4.16 Abandoned Adjudication Processes

After the claimant raises the dispute to the adjudicator, the process may be abandoned anytime by the parties as they may reach a settlement while the adjudicator is assessing the matter. The reason behind trying to reach a settlement is the ability to write an agreement the way they want and not having it imposed by a third party. The contractual obligations and timeframes may be the reason behind starting adjudication so that no party loses its right to defend itself and commence arbitration.

Other reasons mentioned in the published data that stand behind adjudication not proceeding can be classified into four main categories: Contractual, Financial, Procedural and Technical, and Personal (Figure 25).

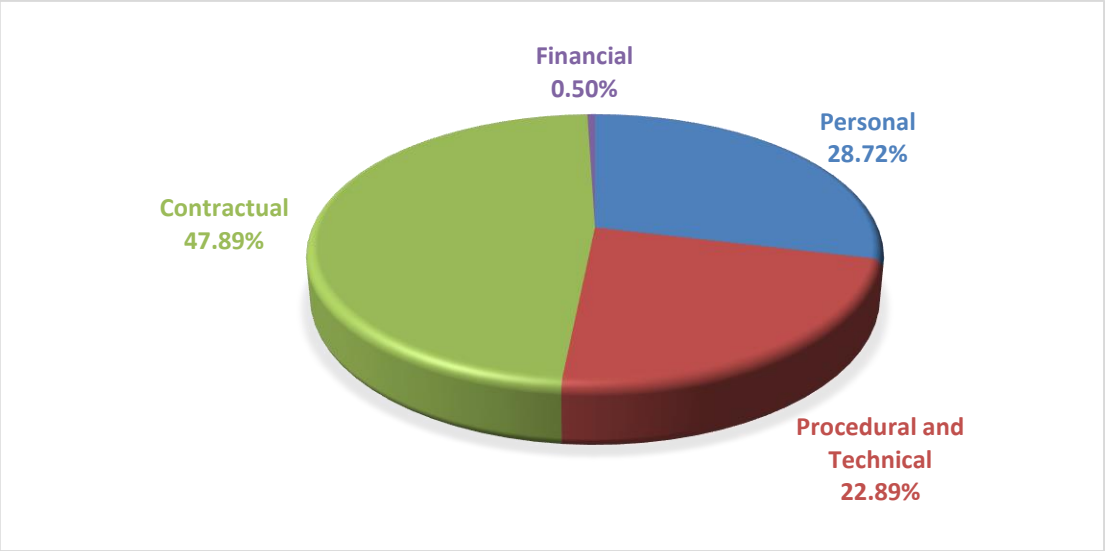

Figure 25 Reasons behind Abandoning the Adjudication Process

4.16.1 *Contractual Reasons*

The contractual reasons represent the main reasons behind abandoning the adjudication process (47.89% of the cases). Of these reasons, the adjudicator cannot issue a decision on the matter if the parties are working without a contract that indicates an agreement between the parties. A party can object referring the case to the adjudication as no contractual reference specifies that the adjudicator has the authority to decide. Also, the absence of a written contract between the two parties leaves no consistent or fixed clauses for the adjudicator to refer to as any party can claim that they agreed on different terms. The adjudicator may lack the jurisdiction or authority to issue a decision due to the absence or ambiguity of relevant clauses that coordinate the adjudication process. All the timeframes and notice requirements, decision type (binding/ final), the resort for the dissatisfied party, and other matters may be sources of disagreement between the parties rather than being a way for solving the issue.

Failing to comply with the notice requirements specified in the contractual clauses that deal with claims between the parties will result in rejecting the referred case without

looking at its merits. The signed contract may contain a clause that prevents a contractor from filing a claim against the owner or subcontractor against the main contractor. Other referrals may be rejected due to the absence of a formalized dispute at the time of the referral.

4.16.2 *Financial Reasons*

Few financial reasons may cause the process to be discontinued (around 0.5%). Being unable to pay the adjudicators' fees will push the claimant (and the adjudicators) to abandon the process especially when the party declares receivership (bankruptcy). In addition, any bank cheque issued by the bankrupt party will not be honored by banks after the party declares bankruptcy which makes continuing the process not possible.

4.16.3 *Procedural and Technical Reasons*

The procedural and technical reasons account for around a quarter of the cases where the adjudication process was discarded after its start. Referring the dispute to adjudication requires the fulfillment of several notice requirements. For example, the English Construction and Regeneration Act that was introduced by the UK Housing Grants in 1996 requires several notices before commencing the adjudication process. The claimant needs to submit a notice of its intention to refer the case of adjudication. The notice of Adjudication contains brief details about the project, the settings of the dispute, and the nature of the dispute and the nature of the sought remedy. This notice is followed by the appointment of the adjudicator or adjudication board. The claimant should send then a detailed notice of referral to the appointed adjudication body. This notice should be detailed and accompanied by documentation in support of the claim together with expert reports (if any) and witness statements. The discrepancy and inconsistency between the information stated in the notices will drive the adjudication

body to abandon the process. The adjudication body may also abandon the process if they feel that the dispute nature differs from their area of expertise which prevents them from issuing a reasonable decision. The parties, in this case, will have to appoint another adjudicator or request another adjudicator appointment from ANBs. Other reasons for the adjudication body to abandon the process include having a referred dispute that has been referred before to adjudication with an issued decision, referring the dispute without a proof, which is generally referred to as “prejudice material”, exceeding the stipulated notice time requirements, and mentioning a wrong respondent name in the referral or/and adjudication notices. The process may also be abandoned if the adjudication body exceeds the stipulated period to issue a decision unless the claimant and the respondent agree to extend it.

4.16.4 *Personal Reasons*

In around 29% of the cases, the parties and adjudication body abandoned the process for personal reasons. As the parties aim to reach a settlement before the adjudicator issues a decision, the parties may ask for the help of a mediator to facilitate the settlement negotiations. Both parties may also decide to abandon the process if they both feel that the adjudicator is not doing his work properly to issue a decision or is in breach of natural justice. The adjudicator may also decide to resign due to being pressured by a party to issue a decision to their favor.

4.17 Winners of Adjudicator’s Decision

Usually, the claimant raises the matter to the adjudicator or adjudication board if they disagree with the decision taken by the initial decision maker. The claimant argues that he’s entitled to more than what was decided initially. The respondent will also be

dissatisfied with any decision against him that was taken by the initial decision maker. The claimants, who were in nearly 80% of the cases subcontractors filing cases against the main contractors, or general contractors filing cases against the owners, won almost two thirds (63.75%) of all the referred cases from 1999 to February 2015 (Figure 26). While the respondents won around one-fifth of all the cases (20.08%), the adjudicators' decisions included split decisions in 16.17% of all the cases. However, the recent statistics show that the respondent parties succeeded in winning more cases along with a noticeable increase in the number of adjudications that ended with split decisions between the disputants.

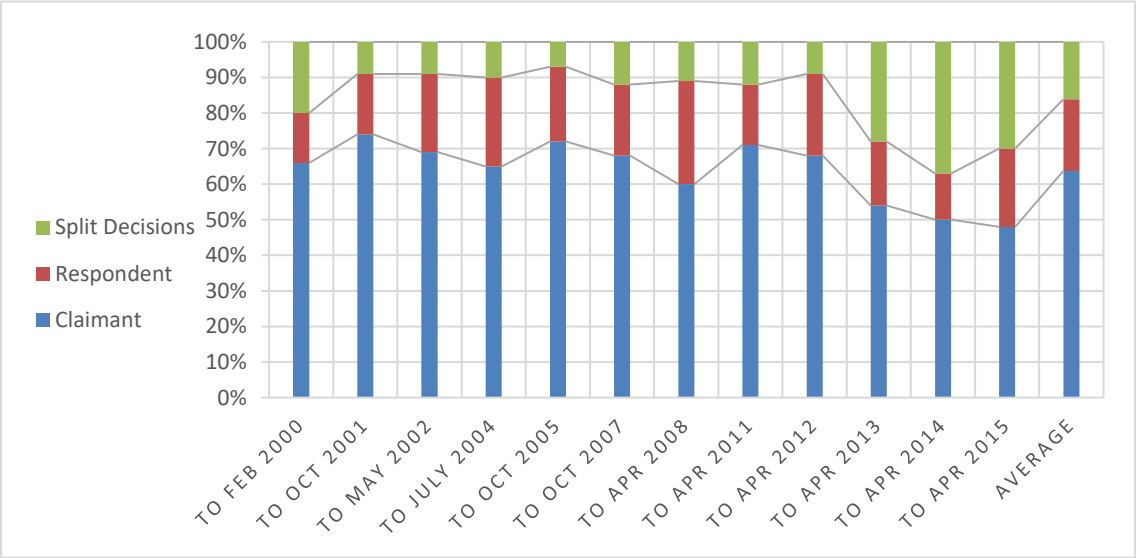

Figure 26 Percentage of Won Decisions by Each Party

CHAPTER V:

INITIAL AND FINAL DECISION MAKERS

5.1 Preamble

As the same profiles of professionals can play both roles as initial decision makers (owner's personnel) and final decision makers (adjudicators and arbitrators), it is essential to identify the qualities that allow a person to act as an initial decision maker and extend these qualities with what distinguishes the adjudicator from the initial decision maker. As the decision of the adjudicator is binding and can become final, there should be guidelines that control the training and appointment of the adjudicators. These guidelines should be followed by adjudication nominating bodies (ANBs), appointing parties (disputants), and adjudicators themselves upon appointment.

5.2 Qualities Needed Along the Dispute Timeline

The three standard contracts, FIDIC, JCT, and NEC assume that an engineer, architect, construction manager, or project manager can take the role of issuing decisions regarding incidents and correspondences between the owner team and other participants in the project. Although these contracts do not specify the required background of the person who takes such responsibility, the contracts spell clearly the responsibilities, rights, and authority given to this person. For this, the qualities that distinguish an engineer from another engineer, for example, as a suitable person to take this role should be set.

5.2.1 *Phase 1*

The owner usually picks a professional with sufficient experience in construction projects and a good understanding of contractual and procedural requirements to act as an initial decision maker for the project. During bidding phase and contract signature, the initial decision maker has to help the owner administer this phase, reply to bidders' questions, and work with the contract administration team to form a solid document that clearly spells rights, responsibilities, and obligations of each party along with the technical, administrative, and procedural requirements. Taking part in forming the contract documents allows the initial decision maker to have a complete understanding of these documents. This requires the initial decision maker to be fluent in the language of the contract which should also be the language used in all the communications between the project participants. This comes from the fact that any misuse of a term in an official communication can be misleading to the other party and may cause a dispute to occur. In addition, the initial decision maker must be able to understand what clauses apply to each case and the allocation of risk and responsibility present in contractual clauses. The initial decision maker, and after starting the works, should abide by the timeframes stipulated in the contract clauses especially for general communications, replies to requests of information, payments, and decision issuance. The contract usually specifies timeframes for all the milestones, procedures, correspondences, and communications between project participants. For this, time management is important as failing to abide by these requirements may cause delays, loss of right for a party, additional costs (compensations for example), or cause disputes.

Upon the occurrence of an event that may lead to a claim by a project participant, the initial decision maker uses his technical, commercial, and financial knowledge to assess

the incident, give directions, or be prepared for a possible claim. The aforementioned types of knowledge required for an initial decision maker have to be strengthened by experience, academic work and research, and attending workshops in order to fulfill the minimum knowledge required, in addition to other qualities, to qualify to assume the role of a final decision maker.

When the claimant submits a notice of claim, the initial decision maker assesses the claim as to fulfilling the claim notice requirements. The claimant has then to submit a fully detailed claim to the initial decision maker. The initial decision maker can deny any claim, release themselves from any responsibility, and put all the risk on the claiming party when the claimant fails to communicate pursuant to a specific contract clause or surpassing the stipulated timeframe. When the claimant fulfills the notice requirements, the initial decision maker should carefully manage the duration stated in the contract to collect and analyze evidence and then issue a decision. To be able to assess the case, the initial decision maker has to have basic knowledge in financial and commercial aspects of the project and in engineering as most of the problems that occur are of engineering background. Such technical knowledge is critical as being late in assessing the cases and taking decisions or taking wrong decisions may affect the whole timeline of the project and increase the costs. For example, having a basic understanding of delay analysis and assessment allows the decision maker to confidently decide on the responsibility and adequate compensation in such case. Even in the presence of a small team of lawyers, accountants, and engineering experts, which needs teamwork and executive and administrative abilities to manage, the initial decision maker should be able to fully understand what's being reported to him from his team. The decision of the initial decision maker, who's the engineer, architect, contract

administrator, or project manager, and in his “quasi-judicial” role, must be issued in good faith and be impartial (Stein & Hiss, 2003) although this may be against the employer’s interests, which holds ramifications on his future work with the employer. In addition, and due to the interdependency of roles, decision-makers can be presented with claims that are actually against their own work (as design professionals for example) and question the adequacy of their own design. The design professionals, for example, may be pushed into an awkward situation where they are supposed to make the employer pay the contractor compensation for their own errors that resulted in ambiguities, discrepancies, and omissions in design documents and specifications. In such cases, the decision maker should not take advantage of having such authority to deny the claim but act impartially and in a good faith as the suffering party may seek compensation in other incidents and situations. For this, some initial decision-makers try their negotiation skills in order to sell both parties a deal that saves their interests and ensures project participants’ satisfaction without the need to escalate the case to final decision makers where the authority to issue a decision is no longer with one of the parties. Upon issuing a decision, the initial decision maker has to explain to the disputants the facts used and on which clauses the decision was based.

The timeline below summarizes the qualities deduced from each milestone of Phase 1 (Figure 27).

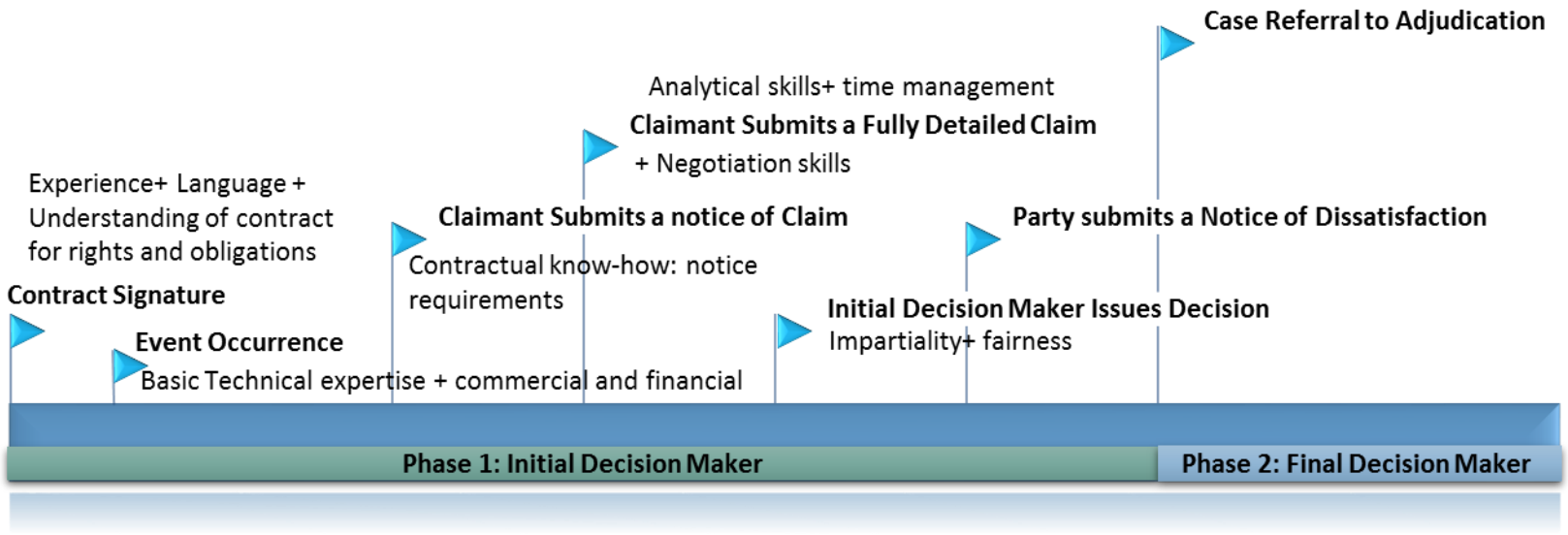

Figure 27 Summary of qualities deduced from each milestone of Phase 1

5.2.1 *Phase 2*

After a party issues a notice of dissatisfaction with the decision of the initial decision maker, the case can be referred to adjudication. The dispute timeline under the three standard forms of contracts, FIDIC, JCT, and NEC, is multistep that requires several notices before a case can be referred to the adjudicator. For this, the adjudicator should be able to assess the referral requirements and check the contractual clauses related to referring the case to adjudication in order to save his appointment or decision from being challenged by one of the parties during the adjudication process as this is one of the reasons that push the parties to challenge the appointment of the adjudicator or abandon the process.

It is understood that a role that is similar to that of a judge in the first-tier tribunal requires a professional with decent and respectable experience in the construction industry in general and dispute resolution in particular (20+ years). The disputants tend to choose an adjudicator whose experience and technical background allow him to understand the referred case particulars. The adjudicator is expected to be erudite in reading contractual clauses especially those related to dispute resolution mechanisms. In this role, the adjudicator checks the communications that took place between the disputants regarding the dispute in question in order to understand how the case escalated from a claim to a dispute and how the submitted information built up. Analyzing the way with which each party used the contractually provided time bars in addition to the decision of the initial decision maker necessitates the adjudicator to have decent analytical skills to be able to decide.

After ensuring that the contract gives the adjudicator the authority to act and that the disputants have referred the case after satisfying the contractual notice requirements, the

adjudicator has to understand the difference of acting as a sole adjudicator compared to be a member of adjudication board. A sole member can issue a decision solely after understanding and analyzing the case. However, a member of the adjudication board has to explain and share thoughts and experts' reports and opinions with board members in order to collectively decide the matter. The data provided by the Adjudication Reporting Centre of the Glasgow Caledonian University and the Adjudication Society for the 28000 cases referred to adjudication between 1998 and 2018 shows that most of the adjudicators (except lawyers) are present on other construction projects in different roles such as engineers, quantity surveyors, architects, construction managers, project managers, and contract administrators. Lawyers, on the other hand, are specialized in contractual and legal issues for their continuous work in this field. For this, the deep technical know-how (compared to the basic knowledge of an initial decision maker) is satisfied due to the appointment of an adjudicator with professional knowledge and experience relevant to the type of dispute, in addition to the team of professionals and experts that can be recruited by the adjudicator. In addition, having different professional backgrounds in the panel helps in having a thorough understanding and explanation of an expert's opinion regarding the matter. However, formal training in law and contract administration is essential as the adjudicator may be requested to act as a sole adjudicator for some cases. The sole adjudicator or the adjudication board can also be appointed during contract negotiation and signature phase. This necessitates the presence of a panel of professionals of different backgrounds or an experienced adjudicator who has more than one specialty (knowledge in construction law and engineering for example).

The adjudicator should be able to identify the background of the expert needed to give an opinion regarding the matter and the added value of that opinion in helping him issuing a decision. Team management and decent communication skills are important characteristics of an adjudicator not only to manage the team of experts but also to lead a dispute adjudication board. The adjudicator chooses the experts, assigns tasks and roles, and decides on due dates for experts' reports. He then has to communicate with these experts and other board members to explain what was concluded.

In his new role as an adjudicator, the professional is not required to negotiate a deal with both parties or try to keep them pleased or satisfied. He is required to check how the matter was initially decided by the initial decision maker as this may present how the issue started and escalated and show what the reasons and merits of that decisions were. The adjudicator may be selected to decide on a case that's worth hundreds of millions which needs a confident, rightful, and impartial decision that holds no mercy as it may be a life-changing decision for any of the parties or lead to bankruptcy. This confidence in deciding and defending the decision when explaining the merits of the decision to the parties is what distinguishes him as a leading and successful adjudicator. The decision should be rational and backed with clarifications and documentation that persuades the parties that this decision is a legitimate decision that will also result from formalized dispute resolution techniques like arbitration and litigation. As such, the parties may be convinced with the decision and decide not to escalate the matter as they feel that the adjudicator gave the most rightful and impartial decision that would be the same in arbitration or litigation if they decide to further escalate the matter. The adjudicator should also be able to communicate his point of view to the board members

and explain how his experience, analytical skills, and understanding of experts' reports helped him reach his conclusions.

Time management is a key quality of a successful adjudicator. As contracts require project participants to submit notices, referrals, and other documents within stipulated timeframes, the contracts also specify durations for the adjudicators to act and issue a decision. For this, the nominated adjudicator should know how to take advantage of all available procedures and choose the most adequate one to the dispute as this has an effect on the time available for the adjudicator to issue a decision since some procedures take time and need preparation. The adjudicator may find that a legal debate between the claimant's legal team and that of the defendant to have a better understanding of what each of the disputants is presenting. For this, the adjudicator should be prepared to comprehend what the legal team of each party presents in such debates to be able to decide after consulting his own team of experts and professionals if needed. The ability to thoroughly read, assess, and understand documents and drawings is essential as the provided data shows that adjudicators relied on documents solely in around two-thirds of the referred cases to adjudication between 1998 and 2017. The adjudicator, and in addition to being able to understand and read contract documents as an initial decision maker, should be able to link and detect what applies from the main contract to subcontracts as nearly half of the cases are disputes between subcontractors and main contractors.

These findings came in line with the description of an adjudicator by Ndekurgri et al (2014) as a professional who’s aware of the adjudication process and able to communicate his point of view concerning the matter to the other adjudication board members clearly, and the deductions made by Harmon (2003) based on a survey that

identified several attributes that should be present in an adjudicator: credibility, technical know-how in construction industry, fairness, impartiality, and knowledge in claim procedures.

The claimant, after being dissatisfied with the decision of an adjudicator can further escalate the case to arbitration. At this point, a professional, who's usually a retired judge or a respected experienced engineer can be selected to act as an arbitrator. In addition to the decent technical know-how, the chosen arbitrator should have deep knowledge of the law and legal side of disputes as the decision falls under the national legal laws and system.

Similarly, the arbitrator, a final decision maker who has an in-depth technical knowledge especially in law, has to assess the referral, study the previous decisions by the initial decision maker and adjudicator, and analyze the submitted documents to issue a final and binding decision.

The qualities deduced from each milestone of Phase 2 can be summarized in the timeline shown in Figure 28.

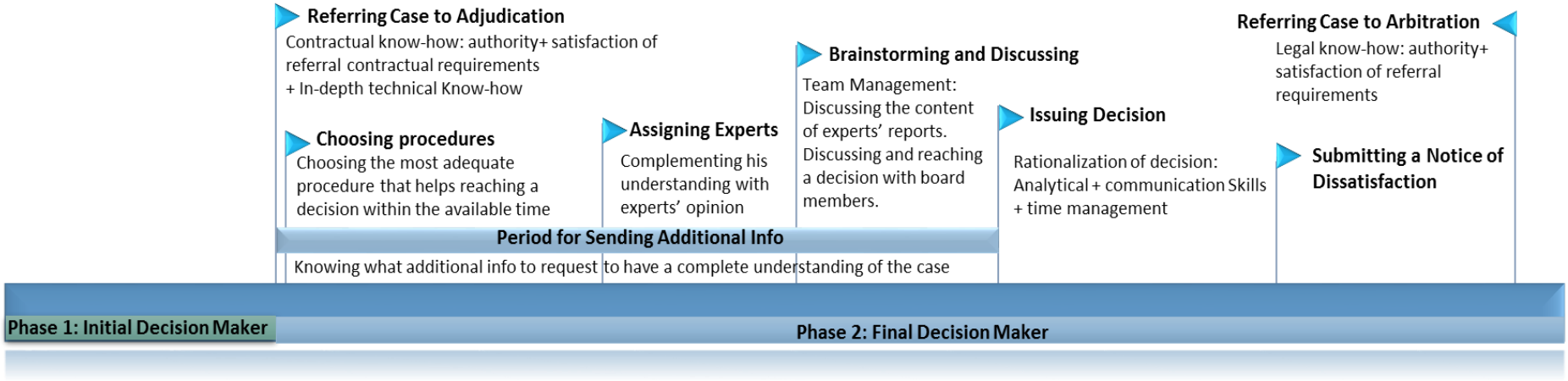

Figure 28 Summary of qualities deduced from each milestone of Phase 2

5.3 Appointment and Training of Adjudicators

In addition to the importance of regulating the process of adjudication initiation and commencement by thoroughly describing the procedure in the clauses related to dispute resolution in the three studied standard contracts, FIDIC, NEC, and JCT, the data published by the Adjudication Society and Glasgow Caledonian University Adjudication Centre shows that the appointment phase is of equal importance. This comes from the fact that the appointment can be determinant to the success of the technique and satisfaction of the disputants. Several requirements, recommendations, and regulations can be imposed on ANBs, disputants, and the adjudicators themselves to enhance the use of this technique.

5.3.1 *Parties' role*

As the parties are contractually required to appoint adjudicators after the contract signature, this can be done after the evolvement of a claim into a dispute. Each party has the luxury to choose one of the adjudicators who jointly choose a third member to act as a chair for the adjudication board if they don't agree on a sole adjudicator. The parties should satisfy several criteria in their search for an adjudicator that include previous experience and work, background, hourly fee, and relevant professional and technical know-how and skills. As adjudication depends on the qualifications of the nominated adjudicator(s), both parties should take the nomination process seriously and ensure that they are confident of their choices. As the parties agree to the nominated adjudicators, naturally, they should professionally respect their decisions which reduces escalation of disputes to arbitration (Cox, 2000). The parties must present all the required documents and every type of evidence that supports their position to the adjudicator and reply to his requests and communications within the stipulated timeframes to facilitate his work.

As parties consider the money given to the team of lawyers, attorneys, professionals, and experts as non-recoverable costs of disputes that lower their profits, the parties should also remember that escalating the case to litigation or arbitration require larger sums as bigger teams are required. The parties' referral should also be made within the timeframes stipulated in the contract and pursuant to the relevant dispute resolution clauses as failing to do so results in losing the right to refer the case to adjudication.

5.3.2 *ANBs' role*

The Adjudication nominating bodies should have their own recruitment tool for adjudicators that focuses on the previous experience in solving disputes in addition to the professional experience and technical know-how in the construction industry. The ANBs should be able to nominate suitable adjudicators for each referred case. The ANBs can have their own training system that allows the novice adjudicators to test their understanding of the merits and presented documents of various case studies and issue decisions that can be discussed with professional and experienced adjudicators. ANBs should also have statistical data of disputants' and disputants' teams' satisfaction with the adjudicator's professionalism and procedural work (excluding their opinion on the decision) through well-structured surveys. These surveys will allow ANBs to detect the weaknesses of the nominated adjudicators and the required training to treat such deficiency. Such practices may reduce adjudicator resignation or appointment challenge by parties which happened in around 30% of the referred cases. As the distribution of adjudicators through the cases showed that engineers, lawyers, and surveyors are appointed in almost equal instances, it is recommended in complex cases to have a panel of three adjudicators with one adjudicator of each profession.

5.3.3 *Adjudicators' role*

The nominated adjudicator should, at first, decide if the case falls within his scope of expertise and resign if not. The adjudicator should ask for a reasonable fee that is proportional to the case complexity and worth. The adjudicator has to act fairly and impartially as his decision is significant to the parties since adjudication decisions are conclusive and as such, the same dispute cannot be brought to adjudication again but only to arbitration or litigation. In addition, the adjudicator should follow the new trends and techniques used in the construction industry, attend workshops related to adjudication, and complete training in the matters that are identified in adjudication reviews. This allows him to enhance his capabilities, increase the disputants' faith in this alternative dispute resolution technique, and build a good reputation.

CHAPTER VI:

CONCLUSIONS

6.1 Summary of Work

The literature review section summarized several studies related to claims and inevitability of disputes. It first elaborated on what causes claims and described the contractual and adversarial requirements for a claimant to receive compensation for his claim. The section also presented several alternative dispute resolution techniques and their advantages. Dispute resolution timeline under was then explained under the three contracts in which adjudication is used: FIDIC, NEC, and JCT. The evolvement of a claim to a dispute and the stipulated timeframes of each step were spelled. The fourth section presented the data collected by The Adjudication Reporting Centre of the Glasgow Caledonian University and the Adjudication Society on 28000 cases referred to adjudication the United Kingdom between 1998 and 2018. The data lists statistical data on the adjudication nominating bodies and their backgrounds, nominated adjudicators and their backgrounds, appointment methods, initiation period, the primary subject of the disputes, disputants, adopted procedure, the timescale for decisions, winners, challenged appointments and decisions, values of disputes, and reasons behind adjudication process not proceeding.

The contractual requirements, guidelines, and timelines along with these statistical data helped in building a better understanding on how the claim evolves into a dispute and how project participants react on each milestone before they commence adjudication as a last resort before arbitration or litigation. This also allowed the deduction of the

qualities of the person who assumes the role of the initial decision maker and extending the list with the additional requirements and qualities that distinguish the adjudicator from an initial decision maker. The section ends with several recommendations to disputants, ANBs, and Adjudicators to enhance the use of this technique in the industry.

6.2 Conclusions

Disputes remained inevitable even with the introduction of new editions of standard documents and creation of dispute avoidance mechanisms. These disputes originate from claims caused by owner and owner's personnel and claims caused by the contractor and the entities that fall under his umbrella. Design errors, ambiguities, and incomplete design information are the main sources of claims caused by the owner in addition to the failure to comply with contractual clauses especially those that stipulate timeframes for replies and decisions. Clients, on the other hand, may claim against the contractors for a product that is different from what was mentioned in the design documents or defective work. In addition, the clients may claim against the contractor for late completion and safety breaches.

The disagreement between the parties extends from acknowledging the occurrence of the event triggering submitting a notice of claim to choosing when and how to assess its impacts and quantify the reasonable compensation. The notice of claim allows proper dispute management to take place. After satisfying all the contractual notice requirements, the initial decision maker issues a decision on the matter to end the dispute. The industry called for alternative dispute techniques when a party is dissatisfied with the decision of the initial decision maker such as mediation, partnering, and adjudication. Disputants choose the dispute resolution technique based on several

criteria. Parties demand to keep the dispute hidden to prevent their reputation from being tarnished. For this, contractors seek techniques that preserve confidentiality especially in the case of performing below quality standards. The overall duration taken to solve the dispute is also of high importance as disputes may cause project delay which is directly related to cost as well. Disputants also seek techniques that give them a degree of control over the outcome. However, they know that having a neutral third party, such as the adjudicator, to impose a rational and binding decision may be the only resort to end the dispute.

Adjudication was introduced to the UK construction industry in the Housing Grants Construction and Regeneration Act in 1996. Several standard forms of contracts used in the UK industry such as NEC, JCT, and FIDIC include clauses that spell and organize the use of the technique. The timeline of the adjudication technique under these standard forms of contracts was described thoroughly. These standard forms of contracts specify timeframes and notice requirements that should be met in order to save the parties' right to refer the case and ensure the given authority to the adjudicator to issue a binding decision.

6.2.1 *Adjudication in Standard forms of Contracts*

In FIDIC, referring the case to Adjudication is a four-step process that requires the claimant to send a notice of claim and wait for the engineer’s determination. The claimant has then to send a notice of dissatisfaction with the engineer’s determination to be able at last to refer the case to DAAB. On the other hand, referring the case to adjudication in NEC contract is a five-step process in both Options, W1 and W2. The claimant has to send a notification of the compensation event followed by an assessment or quotation. After receiving the reply of the project manager and being dissatisfied

with it, and under Option W1, the claimant sends a notice of dispute to the owner and project manager followed by referring the case accompanied with supporting documents to the adjudicator. In Option W2, the claimant has to send a notification of adjudication, wait for the reply and approval of the adjudicator, and refer the dispute to the adjudicator accompanied with supporting documents. Similarly, in the JCT standard contract, the claimant has to follow a five-step procedure to refer the case to adjudication. The claimant has first to send a notice of claim to the contract administrator or architect (the initial decision maker) followed by case particulars in the adjustment of completion date claims and initial assessment in the loss and expense claims. The claimant, and after being dissatisfied with the decision of the initial decision maker regarding the extension or ascertained amount, issues a notice of adjudication followed with a request to the adjudicator to act. After the adjudicator's acceptance to act, the claimant then should send a referral notice accompanied with case particulars. All the referrals, notices, and requests have to be sent within the timeframes stipulated in the used contract. The adjudicator's decision, under the three contracts, is considered binding and enforceable by law. It is noticeable that the duration given to the adjudicator to issue the decision varies between the three contracts. The adjudicator issues the decision within 84 days of the referral of the case to adjudication under FIDIC contracts while he's given 28 days only to do the same job under NEC and JCT contracts.

6.2.2 *Adjudication in the UK Construction Industry*

The Adjudication Reporting Centre of the Glasgow Caledonian University focused, in annual publications, on adjudication after its launch at 1999 and till 2012, in order to organize its use and allow the researchers to propose solutions for the flaws and

formalize some regulations to increase the disputants' trust in this technique. After 2012, the Adjudication Society continued publishing reports on the cases referred to the Adjudication Nominating Bodies (ANBs). These reports included detailed stats on several aspects of the cases such as initiation timing, winners of adjudication decisions, and reasons behind adjudication not proceeding. The data that consists of around 28000 cases shows that the adjudicators have various professional backgrounds that can be summarized into three main categories: Engineering, Surveying, and Legal. However, it is noticeable that the engagement of lawyers as adjudicators is increasing. These various backgrounds come in line with the numerous reasons for disputes. In almost 81% of the cases referred to adjudication, the referral was made after practical completion. The claimant may collect several disputes and refer them in a single file to the adjudication body after fulfilling all the contractual notice obligations. Although economic, personal, and technical reasons may push the disputants to abandon the process, most of the cases were concluded within a 28-day period. In addition, it was recognized that the main procedure adjudicators depend on is using the documents to understand the merits of the case especially with the limited timing given for adjudicators in NEC and JCT contracts.

6.2.3 *Deduced Qualities*

The author tried to conclude from the published data and the dispute and adjudication timelines under these three standard forms of contracts. The author found that an initial decision maker should be fluent with the language of the contract which is also used in communication between the parties. He's also required to have the ability to grasp every single detail of the contract documents and be able to detect the risk allocation and contractual rights, roles and requirements of each party. The initial decision maker

should also have the basic technical and managerial know-how to be able to manage a team of professionals and experts, read and analyze reports, and issue fair and impartial decisions within the contractual timeframes. The initial decision maker under the quasi-judicial role should know the procedures and contractual requirements of commencing adjudication in addition to the ability to explain his point of view to other board members and the confidence when making decisions. In addition to the mentioned qualities, the final decision maker should be able to assess the referral and the authority given to the adjudicator under the given contract. The adjudicator should also be able to choose the most adequate procedure and the type of experts needed in order to come up with a full understanding of the case and issue a rational decision. The adjudicator should have analytical, team management, and time management skills to succeed in his quasi-judicial role.

6.3 Limitations of Research

The research was based on data collected by adjudication centers and the technique mechanisms deduced from three standard forms of contracts, FIDIC, NEC, and JCT in which adjudication is used.

Although many projects use a form of these contracts, clients still delete some clauses that allow the contractor to seek the help of an adjudicator as a neutral third party after being dissatisfied with the decision of the initial decision maker. This, accompanied with the lack of adjudication centers in other countries, prevented the author from comparing the state of the technique and finding the complications adjudicators face in other construction industries. In addition, adjudication is not common in the Middle East region which is the reason behind having all the cases referred directly to

arbitration or litigation following the dissatisfaction with the initial decision maker's decision.

The data used is publicly available on the websites of the Adjudication Society and the Adjudication Center of the Glasgow Caledonian University. However, the data had several years missing for some headings in addition to the broad language and absence of any sort of analysis, reasoning, or explanation.

6.4 Recommendations

The analysis, conclusions, and limitations of research that resulted from exploring the claim and dispute timeline under the three standard forms of contracts, NEC, JCT, and FIDIC pave the way for a list of recommendations to be generated. These recommendations should be considered by appointing bodies, contract administrators, disputants, and adjudicators to get the benefit themselves and the market as a whole.

- Arranging workshops for project participants, clients, and contract administrators to explain and clarify for them how the technique truly works in order to encourage them to keep the contractual clauses related to adjudication when using standard forms of contracts instead of leaving the absolute power for the initial decision maker
- Introducing a feedback system allows the disputants to rate the adjudicators and point out the weaknesses of each adjudicator and the adequate training for each
- Project participants should depend on the adjudication nominating bodies to assign adjudicators with an adequate technical background, experience, and compatible language.

- Enhancing the use of ad-hoc dispute adjudication board that is present not only to issue decisions on disputes but also to help the project participants avoid escalation of disagreements to disputes while being informed of all details

6.5 Future Work

The future work starts with identifying the reasons behind abandoning adjudication and suggesting ways that help in persuading contract drafters to keep adjudication as an alternative dispute resolution technique. This would have the effect of reducing the time and costs needed to solve disputes through formalized dispute resolution techniques such as arbitration and litigation.

Identifying what metrics that ANBs should focus on while evaluating the work of an adjudicator following issuing a decision is essential along with introducing a unified user-friendly system for the nomination of adjudicators that allows ANBs, Adjudicators, and disputants share information effortlessly to create world-wide statistical data.

CHAPTER VII:

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