

**STUDY OF NEGOTIATION, MEDIATION, CONCILIATION, ADJUDICATION AND
ARBITRATION AND THEIR EFFICIENCY IN RESOLVING DISPUTES AS
ALTERNATIVES DISPUTE RESOLUTION METHODS IN THE CONSTRUCTION
INDUSTRY IN IRELAND**

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ABSTRACT

The construction industry is one of the booming businesses which contributes to the economic and social development of Ireland and worldwide. When conflict arises in a construction project it can affect the performance and quality of the works, notwithstanding, disputes are never budgeted, therefore, the key question to ask is what would be the appropriate method for resolving it in an easier, quicker and cheaper way. This paper is an attempt to provide an understanding of the causes of conflict in the Irish construction sector, to explore the current options to access justice through the Alternative Dispute Resolution (ADR) and to evaluate the efficiency of the ADR methods through their costs, duration, outcome, and satisfaction. A questionnaire survey was conducted to professionals of the Irish construction industry which results were presented using statistical tools such as frequency tables, charts and Relative Importance Index (RII) methods. Based on the analysis data, the disputes regarding contractual documentation were the most typical type of conflict in construction, while negotiation was distinguished as the preferred ADR since it was recognised to save time and preserve the business relationships. From the findings, it can be concluded that conflicts in construction remain an object of concern for the industry since can impact monetary matters, reputational considerations and damaged business relationships, therefore, training in organisational management would be helpful to deal with or prevent conflict in construction. This study is addressed to the construction industry and students undertaking construction disciplines. It's expected to be assistance for the management of conflicts in upcoming construction projects.

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INTRODUCTION

Construction activities are complex, high risk and its industry are very competitive since big amounts of money, resources and people are at stake (Mashwama, et al., 2016). Despite the technological advances already acquired by this sector, there are still many deficiencies to be overcome (Neto da Silva, et al., 2017). Delays, poor communication, technical issues and unclear contracts are examples of conflict causes which impact may threaten the success of the completion of a construction project and therefore, the implication of severe costs, energy and time to its resolution (Rauzana 2016, p. 45), especially if the conflict escalates and moves to a formal determination by litigation (Mashwama et al., 2016, p. 197). Notwithstanding, any arisen claim by a party in a dispute must adhere to the steps expressed in the construction contract terms, particularly the dispute resolution clauses where Alternatives Dispute Resolution (ADR) options are provided. ADR are methods intended to assist the resolution of conflict in a timely, economic, confidential and flexible way seeking the remanence of business relationships as a critical aspect for small societies like Ireland (Cunninghman 2015, p. 8). Negotiation, mediation, conciliation, adjudication and arbitration were the subject of study of this paper following the provisions for ADR most commonly utilised in the main Irish forms of building contracts.

In Ireland, the tendency of investment in building and construction involves billions of euros with hundreds of construction projects providing employment and long-term construction careers across Ireland (Procurement Office of Government 2019, pp. 1-2). As conflicts are virtually inherent in construction activities, is critical to understand and assess the root causes of conflict in order to prevent and/or resolve disputes efficiently (Cunninghman 2015, p. 1). This research is undertaken for examining the current causes of construction disputes in Ireland and to compare the ADR efficiency

through an analysis of the direct costs, duration, outcome, impact on the relationship between parties, overall gains and satisfaction. Additionally, nine aspects of concern were evaluated when attempting a dispute resolution, such criteria are related to costs, speed, privacy and confidentiality, outcome, enforceability, preservation of relationships, flexibility in the procedure, openness, neutrality and fairness of the process as well as the degree of control by parties.

Primary and secondary research was employed to develop the present work. Primary data were derived from a structured questionnaire survey conducted to 45 participants of the Irish construction sector including architects, project managers, contractors, quantity surveyors, etc., while the secondary research was taken from journal articles, reports, books, etc. which data was embodied in the literature review. The data obtained from the survey allowed qualitative and quantitative analysis based on frequencies of occurrence, and its statistics were presented in frequency tables and charts for a comprehensive purpose. The results indicated the disputes regarding contractual issues were the prime cause of construction conflicts while negotiation methods were the most common ADR attempted for disputes in construction in Ireland. Besides, the principal concerns of the Irish disputants when attempting an ADR method were in regards to the outcome, enforceability, neutrality and fairness of the process.

Nevertheless, the study has not explained how construction conflicts are managed or resolved through court proceedings as the traditional method to access justice. On the other hand, further research is needed to provide more detailed data concerning the risks in constructions as well as teaming and work organisation.

CHAPTER 1: REVIEW OF THE LITERATURE

1.1 INTRODUCTION

The construction industry works with complex projects which may occur conflicts due to the diverse skilled people labouring and contributing different points of view, techniques and behaviours. Consequently, conflicts can mainly provoke time and monetary losses as well as reduced productivity or shattered business relationship. Since claims and disputes keep rising, the construction industry struggles to resolve such problems in an efficient, economically and fair manner (Jaffar, et al. 2011 pp. 193-194). The Alternatives Dispute Resolution methods emerged as a part of creative lawyering in the 21st century offering reduced time and costs to resolve disputes in contrast to litigation. Flexibility, privacy, creative solutions, retention of relationships are some of the advantages of the ADR which are becoming an increasingly used method of justice that deals with finding the best way for people to settle an agreement (Fiadjoe 2004, pp. 1, 8).

The scope of the literature review of the present work covers the different types of dispute which can arise in the construction industry, the main Irish forms of building contracting that enact the provisions of the Alternatives Dispute Resolution (ADR), the description of the main ADR utilised in Ireland for construction conflict which are negotiation, mediation, conciliation, adjudication and arbitration. In addition, is analysed a topic concerning the importance of aspects when attempting an ADR method. Primary and secondary research were selected of recent and trustable sources obtained from empirical studies, books, reports, journals, etc.

1.2 DEFINITION OF CONFLICT AND DISPUTE

A conflict is a disagreement, a clash of ideas, interests or values. Conflict is normal, it demonstrates that every single person is unique and different (Fiadjoe 2004, p. 8), so that, people cannot perceive things in the same way due to their life experiences which have influenced their personal biases. Proksch (2016), has claimed that in the past, conflicts were seen as something adversarial, however, nowadays the concept has been transformed as a constructive debate which may result in cooperation and consensus offering development, change and innovation. Additionally, Fenn, et al. (1997, p. 513) have stated that conflicts can be managed possibly to the level of preventing a dispute arising from the conflict. In this way, a dispute is a conflict that it hasn't been properly managed, so that is typically associated with justiciable issues which the common responses are to fight or force a solution, often of the win-lose nature (Fiadjoe 2004, p. 8). Thereby, since disputes are related to justiciable matters, they require management through resolutions that frequently involve the intervention of a third party (Fenn, et al. 1997, p. 513).

Despite both terms cause confusion among the construction professionals, conflict and dispute are used interchangeably in the industrial sector (Rauzana, 2016). Nonetheless, the best way to deal with either conflict or dispute when just emerged is by immediately settle its management in a productive and cooperative manner. Conversely, if this continues, a resolution is needed and will be costly, lengthy and may affect the reputation of a business (Maru, 2019, p. 4).

1.3 CONFLICTS IN THE CONSTRUCTION INDUSTRY

The construction sector comprises all production works and services in which each project is unique and its development and operation cannot be standardised or tested in advance (Younis et al. 2008, p. 728). Infrastructures such as roads, buildings, ports, tunnels, bridges and land, in general,

require construction operations of a team that is provisionally assembled for a specific project, so that, it implicates the owner's version, the formal design and its termination, the selection of the teamwork which frequently incorporates many subcontractors, the construction activities on-site, and project billing and commissioning, etc. (Mashwama et al. 2016, p.199). Since construction activities are complicated to carry out skilled works, the project requires numerous people where the prominent participants are listed below and represented in Fig 1:

- **Owner/Client:** Represents the “investor” who appoints the designer, contractors and project manager. They also provide clarity to the project, supervise for constructability and seek the minimisation of costs for the execution of the project (Cunninghman 2015, p. 1).
- **Consultant representative (civil engineer, architect, project manager, mechanical and electric engineer, quantity surveyors):** Coordinate designs of structural, civil, architectural, electrical and mechanical subjects, provide and update specifications and drawings, deliver project information, etc. (Jaffar, et al., 2011). Predominantly, they endure pressures on budgets to preserve their “brand” (Cunninghman 2015, p. 1).
- **Contractors:** Contractor duties are supervision, coordination, design and execution of work changes, scheduling and updating project requirements and price calculation of the works. They concern the completion of the construction activity agreed in the timeframe to generate monetary profits (Jaffar, et al. 2011, p. 196).
- **Subcontractors:** Workers contracted by the contractors to perform particular parts of works related to roofing, steelwork, plumbing, painting, pilling, etc. Subcontractors are needed to mitigate project risks or minimise expenses (Designing Buildings, 2021).

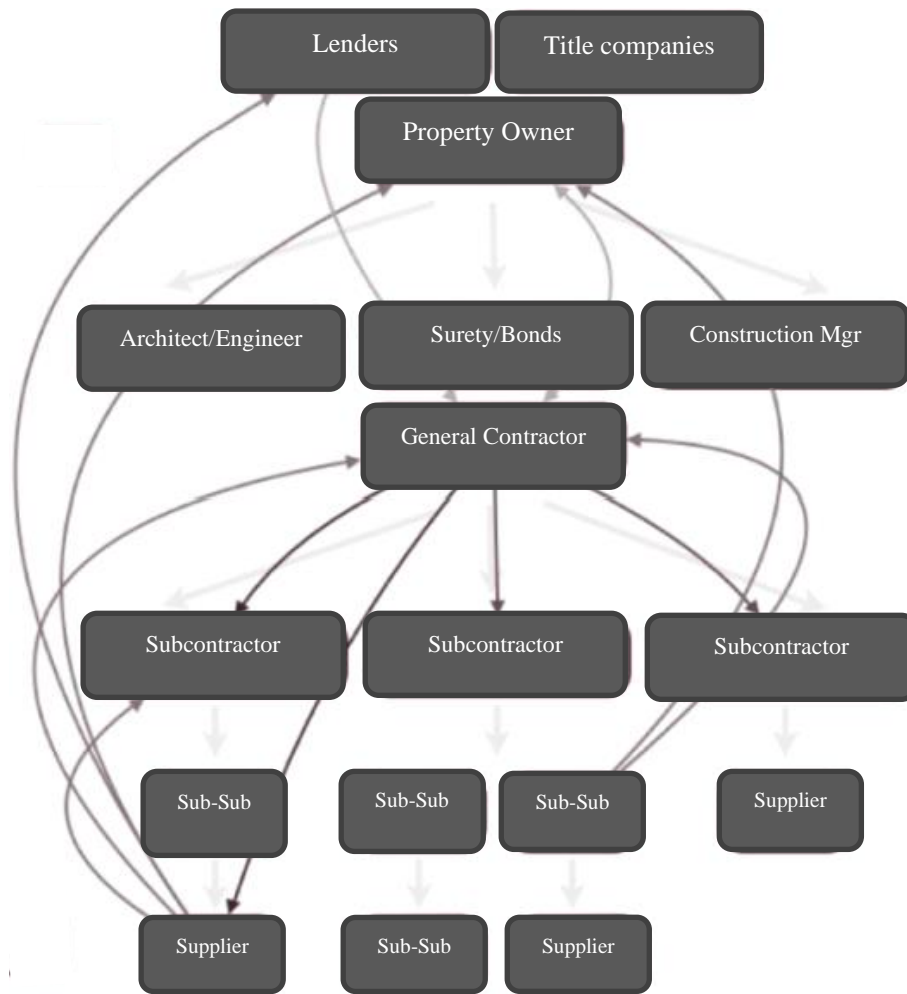


Figure 1. Typical supply chain for complex construction projects (ECSO 2020, p. 41).

Peckar & Zicherman (2019, p. 59) have affirmed that construction works have typically two types of models/styles in which a project is structured according to the responsibility for design and performance of the activities involving the main participants.

(1) Traditional model/build-only, in which the employer design the works, therefore the contractor and design consultants are contracted separately;

(2) Design and build model, in which the prime contractor is in charge to design the project and engages the design consultants and subcontractors.

Thereby, construction projects are complex, lengthy and relational, so that, disputes are practically unavoidable between two or more parties in the works. Jaffar et al., (2011), have expressed

that conflicts happen when something in the job doesn't go well and may have an impact to reach the fulfilment of the ultimate objective. She (2011), claimed that such disputes commonly start when there is ambiguity or unclear definition of a risk and therefore, parties may experience discontent, controversy over decisions, hostility and negative attitude. Figure 1 illustrates how a risk can be turned into a dispute where the escalation is due to mismanagement of the issue within the construction industry.

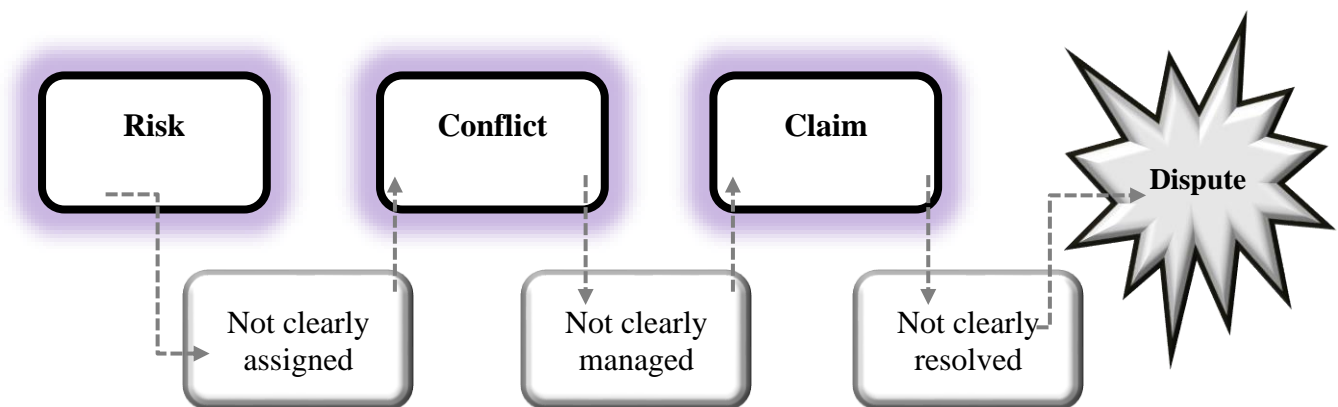


Figure 2. Construction risk turning into a dispute (Maru 2019, p. 2)

A “risk” in construction is described as a potential event to an activity within the project which is beyond the parties’ will and can have an impact to reach or not the objectives. Nys, (2018) appointed some instances such as delays, access issues, quality of materials, etc. Hence, the dispute emerges when one party claim something and the other rejects it, then, the rejection is not accepted. Mashwama et al. (2016), have expressed in other words the dispute begins from a problem that cannot be settled on-site and escalates to a more senior organisational level. Consequently, a party can claim their entitlements to remedy or money under the contract by either breach of not following the contract or not complying with work responsibilities (She, 2011).

Thereby, a contract in construction projects plays a significant role in the provision of information on issues that may occur in the construction project which need to be considered for a

claim by any concerned party. Some contracts, for example, deal with variations, extensions of time, liquidated damages, etc. Other contracts lead with money and time under compensations. Nonetheless, if an issue arises outside a contract, then, the contract should be reviewed subject to contractual changes (beyond variations) and modified by agreement between the parties. (RICS 2012, p. 21).

1.4 CAUSES OF CONFLICT DISPUTES IN THE CONSTRUCTION INDUSTRY

The literature shows a broad range of variables related to the causes in the construction industry which may vary from one project to another, notwithstanding, Jaffar et al., (2011) have declared that one of the most significant concerns of such causes represent the impact on monetary matters on the estimated construction project/work. In summary, dispute causes in the construction industry are mainly linked to two aspects: human behaviour related and construction-related, nonetheless, such causes can often be resolved through the contractual procedure, some others turn into disputes (Cunninghman, 2015). Although the causes of conflict in the construction industry can be intimately linked one to another, the present work categorises 9 main factors of conflicts in the construction industry:

1.4.1. DISPUTES REGARDING CONTRACTUAL DOCUMENTATION

Contractual matters are a notable portion of disputes in the construction industry, so that, contracts are substantial in avoiding and resolving disputes (Younis et al. 2008, p. 733). Notwithstanding, the work collaboration of diverse parties in a project is controlled by a contract which states the exchange of services/materials for money, so that, conflict can arise when there is

variation, delays of payment, an extension of time, quality regarding the specifications to carry out the project, accessibility of management or information, lack of understanding if the contract is in a foreign language, etc. (Jaffar, et al., 2011).

Cunninghman (2015) has explained that contractual documentation conflicts begin when a party argues that the other party has not followed the contract. Furthermore, Jaffar et al. (2011) have claimed that the blame is broadly on the owner when they cost the contractor extra expenses.

Nonetheless, in spite of is well known by construction workers that there is not a perfect contract due to drafting errors, lack of detail, human error or ongoing changes of the project, a righteous negotiation of the terms of the contract between the parties can be done by allocating risks, team building, drafting disputes clauses and providing an ADR method if a dispute arises. Besides, Cunninghman (2015) has asserted that in this way, the conditions of the contract regulate if a claim is valid or not, and establish procedures for its evaluation and management. Contrastingly, the lack of detail or ambiguity of contracts may make people confused and therefore the likelihood of the emergence of a conflict. Conclusively, contractual disputes require definition, clarification and interpretation of the contract terms. (Jaffar, et al., 2011).

1.4.2 DELAYS IN AGREED DEADLINES AND COMPLETION

Under a contract, the estimation and allowance of an extension of time are the accountability of the contractor administrator, the architect or the employer's agent. The RICS (2012) have declared that an extension of time typically means an increment of costs and impact on project performance and consummation. Thereby, a modification in specifications during construction, slow delivery of resources such as information, material, equipment, equipment inefficiency, design errors, late decision-making by the owner, obstacles with the foundation conditions or soil, permissions from the municipality, bureaucracy issues, edition and approval of designs, disruptions, drawings and

specifications of the project, poor coordination, unskilled team members, lengthy testing/inspection procedures, negotiation to secure the contracts, lack of professional construction management, disagreements among the parties, accidents in the course of construction, errors during production rework, legal disputes between parties of the same project are some of the instances related to delays explained by Younis et al. (2008). Notwithstanding, according to Razia et al., (2017) recognizing and evaluating the potential delays helps the construction sector to adequately design and adapt to carry out activities on time.

1.4.3 TECHNICAL ISSUES

Technical problems occur when the contractor, engineer or architect act in an incompetent manner causing lateness or making mistakes to the project. According to Jaffar et al., (2011) uncertainty represents the most common factor concerning technical issues, such uncertainties can be: Unrealistic client expectation and/or contract duration, delayed information or commands from engineer to architect or vice versa, inadequate design/site investigation, lack of technical specifications, changes in the project scope or even ignorance of the technological advances, etc. Consultants can also face errors by uncoordinated designs of structural, civil, architectural, electrical and mechanical matters, incomplete or outdated specifications or drawings, etc. Thereby, a design error may cause changes in the means, length, methods and/or conditions of the construction procedure. Other technical matters presented in the work of Rauzana (2016) are related to estimation error, miscalculation of work, lack of supervision and management, and failure to correctly price the work.

Technical defects can be detected during work progress, and the contractor is in charge to fix them. However, Jaffar et al. (2011) have stated that if the defect remains and causes substantial issues, project management can assist, contrasted to the resolution of contractual conflicts. Furthermore, the

RICS (2012) have appointed that a proper evaluation has to be made by expert assistance and may result in conflict over valuation. Overall, technical issues involve decision making and explanation from engineering, so that, requesting the information is one of the most effective ways to understand and avert a technical conflict (Jaffar et al. 2011, p. 199).

1.4.4 OPERATIONAL ISSUES

Operational implications are related to lack of quality, organisation and productivity on the site construction which directly affects the success of the construction project, besides it compromises clients, consulting engineers and architects work (Koch 2004, p. 1017). Operations produce goods and services that can be negatively impacted due to restricted site access, limited resources like money, time, staff, equipment, materials, etc. (Jaffar et al. 2011, p. 195). Additionally, Younis et al. (2008) have stated that wrong manufacturing practices, competitive priorities, the volume of production, damaged material, unskilled workers, breakdown of the machinery, insufficient utilities on site, misguided methods of construction, licenses and permits, site safety, artificial obstructions, testing and sampling, site preparation and accidents represent some instances of operational obstacles. Operations in construction projects require site management and coordination since the conditions are commonly altered over time, hence, good operation strategies and management minimize operational difficulties by mastering technology, scheduling, and planning techniques (Koch 2004, p. 1018).

1.4.5 PROJECT COST OVERRUN

Variations in a project are virtually assured, thus, an increased cost of it and the possible reduction of investment effectiveness. The RICS (2012) have appointed that overrun of costs in

constructions is a result of changes to the contract in which an omission of provisional costs was made and then the addition of the actual expenses is updated, accordingly, it might have an impact on unfeasible, unsuccess or cancellation of the project as well as disputes or damaged business relationships. On the other hand, Cunningham (2017) stated that overrun of costs can be derived from an enlarged time on-site, project acceleration, overtime shifts, design improvements, client's decision and priorities, uncertainties, market factors, ground conditions, failure to manage risks, delays and judicial disputes. However, although this type of conflict can traditionally be claimed as a variation under the construction contract, an over expenditure can be avoided through a plan which acknowledges the root causes of variations and where the quantity surveyor can assist to diminish its negative impact (Cunningham 2017, p. 27).

1.4.6 PAYMENT DELAYS

Payment delays are payments not made according to the statutory contract timeframe. According to ECSO (2020) payment delays are popularly associated with the behaviour of construction enterprises which frames unfair and informal business practices. Cunningham (2015) explained that cashflow issues during construction occur due to the configuration of the construction supply chain, financial difficulties of public bodies, non-transfer of funds by other authorities, financial instability, bureaucracy, imbalance of power between the supply chain, etc. Other examples of payment delays stated by Younis et al. (2008) are according to contactor progress, insolvency, interest recovery, funding limitations, inflation, exchange rates, or even when a party pretends to resolve a dispute by ADR but the real aim is to delay the system of payments by dragging out the proceedings. Overall, long or unfair long payments are associated with lawful issues and can be prevented by codes of good and transparency practices, awareness in raising campaigns, stricter payment terms or invoice management measures (ECSO 2020, p. 7).

1.4.7 BEHAVIOURAL/COMMUNICATION ISSUES

Jaffar et al. (2011) claimed that people represent the primary cause of conflicts in the construction industry since every group secure different objective which are frequently competing and sometimes incompatible. Cunninghamman (2015) added that the uncertainty and the disbanded multidisciplinary temporary assembly for a particular project are possible causes of conflict emergence in the construction industry. Nevertheless, conflicts due to behavioural problems are related to the interaction of the members working together sharing differences in culture, personality and professional background in a work where everybody seeks to feel approved or accepted. Consequently, the ego of each member of the team such as the increment of their recognition, the protection of the self-image and reputation are at stake to be furthered in an extension of position or clinch a promotion, etc. (Jaffar et al. 2011, p. 197).

Jaffar et al. (2011) added that conflicts attached to human behaviour are also caused because of the lack of experience to negotiate and manage many issues at the same time, lack of leadership in the team, unrealistic expectations or because people want to control the doings, etc. Lack of team spirit, misinterpretation, mistrust, unclear roles of responsibilities, imbalance in the risk allocation of the people involved in the project, poor communication among the members of the team, differences in work culture and reluctancy to verify for constructability are some instances of human behaviour conflicts which may have an impact on individual's dissatisfaction. Overall, when something interferes to satisfy the process, the security and goals are at risk and the communication turns tense, so that, tension typically follows demands, rejections, stiff positions, and finally monetary losses. Notwithstanding, Jaffar et al. (2011) asserted that teamwork approaches, reconsideration to goal realisation and power balance help resolve this type of problems.

1.4.8 EXTERNAL HAZARDS

External hazards are unfortunate conditions that emerge from outside the construction project, therefore, are unrelated situations to the construction activities which may affect the success of the work objectives. Additionally, Mubarak et al. (2017) pointed that these events are uncertain and may occur while construction as conditions that are beyond a parties' domination, therefore, it may impact time, performance and costs. Pandemic, Brexit, weather conditions, acts of God, strikes, fire, religious holidays, bank holidays, economic disaster, earthquake, war, riots, environmental regulations, unforeseeable archaeology/utilities encountered, government policy on taxes, energy restraints, military conflict, monetary conditions, changes in legislation, and vandalism are cases that exclude liability in a construction project (Younis et al. 2008, p. 731). Nevertheless, Peckar & Zicherman (2019) expressed that careful attention is needed while drafting and negotiating broad exemption clauses concerning time and/or additional fees in construction contracts.

1.4.9 UNETHICAL PRACTICES

According to Adnan et al. (2012), the construction industry is known as the most fraudulent industry in the globe where ethical dilemmas are susceptible due to the extensive amounts of money that are a stake. Shah & Alotaibi (2017) asserted that unethical conduct in construction ranks as the most serious in which conflicts are often of interest related to overbilling, bribery, fraud, corruption, intimidation, kickbacks, extortion, cover pricing, lack of safety ethics, unfair treatment among the workers, falsification of qualifications, bureaucracy, etc. The reasons behind these practices are because the lack of ethical education from the professional system, cultural changes, competition, difficulties while constructing, eased legislative measures and economic constraints, etc. Therefore, the impact may affect the faith of investors, quality of the projects, exposure of defects or accidents

as well as the construction companies may encounter reputational risks, blacklisting, extra expenditures, tendering uncertainty, blackmail, penalizations, prosecutions or company closure. Notwithstanding, Shah & Alotaibi (2017) also added that unethical issues can be addressed through careful monitoring, stricter reforms, preventive approaches and education campaigns directed by government agencies and professional institutions.

1.5 IMPACT OF CONFLCITS ON THE CONSTRUCTION INDUSTRY

Conflict disputes in construction represent the main factor that risks the successful accomplishment of a construction project (Mashwama, et al., 2016). Cunningham (2015) has pointed that disputes at organisational level involve adversarial consequences related to the rising costs of the project, loss of profit, decreased productivity, project delays, rework, damage in business relationships, reputational considerations or even ruin a company Besides, the expenses to resolve such disputes are usually costly and lengthy and there is a risk to proceed to court. On the other hand, Jaffar et al. (2011) stated that in regards to worker/individual impact, a disagreement makes team members get stressed and distracted from their responsibilities, affecting the efficiency, productivity and quality of the work which in the end produces a negative impact on clients (Mashwama et al. 2016, p. 199).

Mashwama et al. (2016) have explained the quantification of the costs of construction disputes as next:

- **Direct costs:** Expenses and fees paid to claim consultant, lawyers, venues, accountant and third party fees, etc.
- **Indirect costs:** Costs related to witnesses 'expenses such as employees or managers who have to connect the facts and process the disputes.
- **Hidden costs:** Costs that can be difficult to measure since are associated to working

discouragement, delays, inefficiencies, time, loss of quality, tension business relations, reputational damages, etc.

On the other hand, Jaffar et al. (2011) pointed out that not all conflicts cause a negative impact, a conflict also challenges a functional effect and may strengthen the relationship of individuals, group or organizations. Furthermore, Rauzana (2016) indicated that some examples of constructive outcomes are the provision of new ideas or information that can help the decision-making, conflict makes the parties review and consider other views and therefore a possible mutual understanding and esteem for the opinion of others, the empowerment of leadership to help in the solution of a problem, etc.

1.6 BACKGROUND OF THE IRISH CONSTRUCTION INDUSTRY

The construction industry in Ireland continues growing providing jobs and wealth, notwithstanding, all construction activities have to be subject to a mandatory system of certification. *The Building Control (Amendment) Regulation 2014 (BCAR)*¹ is a system introduced to assure a building is constructed under *The Building Regulations 1997-2018*² (the Building Regulations). Moreover, the Irish government published *The General Scheme of the Building Control (Construction Industry Register Ireland) Bill 2017 (the Bill)* to guarantee builders and contractors possess the competence to carry out construction activities, thereby, the consultants and designers need to be registered under the corresponding body, for instance, the architects have to be registered under the Royal Institute of the Architects of Ireland, or workers involved in electrical or heating duties are

¹ BCAR is a legislation that controls the certification and inspection of new constructions and extensions in Ireland. The principal aim is to enhance the quality of the works as well as guarantee the safety standards during construction and on completion (Bryson, 2015).

² The Building Regulations is a statutory element created by the Law Reform Commission to set the requirements of design, construction and extension of new buildings but also to prosecute for no compliance with the established requirements (Building Control Regulations, 2017)

signed up under The Registered Electrical Contractors of Ireland (Peckar & Zicherman 2019, p. 57).

In conformity with Cunningham (2013), any successful construction project is followed by standards, thus, that project management is in charge to accomplish the project objectives where the contracts represent a substantial part of the process. The contracts issue several certificates and describe the importance of each, so that, a judgment can be made over an issue arising under the construction works.

1.6.1 IRISH CONSTRUCTION CONTRACTS AND THEIR ADR PROVISIONS

According to Construction Contracts Act 2013³, a “construction contract” means an agreement (whether or not in writing) between an executing party and another party, where the executing party is engaged for carrying out construction operations by the executing party, arranging for the carrying out of construction operations by one or more other persons, whether under subcontract to the executing party or otherwise and/or providing the executing party’s own labour or the labour of others, for the carrying out of construction operations.

Nonetheless, Cunningham (2018) has reported that despite many contracts can be made by word, a proof is needed to show its validity by a written record of the bargain deal reached by the parties to specify in detail the works, as well as the rights and obligations of the parties. Thereby, according to FICS Professional Guidance (2012) and Benarroche (2019), a construction contract should clearly ensure details such as:

- Full description of the works information

³Construction Contracts Act 2013 is a legal instrument applicable to the public and private Irish sector in construction contracts undertaken after July 2016. Its function is to regulate payments according to construction contracts by the imposition of clear amount payments within non-residential contracts above €10,000 and residential contracts over 200m², it also makes the clauses of a contract to be effective and provides the parties with the opportunity to refer their construction contracts to adjudication (Cummins, 2016).

- Lump-sum, unite-price, cost-plus and guaranteed maximum price
- Payment claims dates and amount due for the work
- The exact information for the completion dates, appendices, insurances, etc.
- Rights and obligations of the contracting parties
- Materials and all technical work-related documents (specifications and drawings).
- Contract edition and if any sectional completion, amendments or supplements apply.
- Any additional document such as collateral warranties, bonds, guarantees, etc.
- Conditions if any suspension/termination procedures and dispute resolution clauses.
- The signature as an agreement to execute the construction project.

Consequently, the ADR options provided in the dispute resolution clauses are critical since constitute a series of steps to be followed if any dispute arises or escalates during the construction project. In accordance with Kirschner (2019) the dispute resolution clauses shall include:

- Service of a notice concerning all the issues that constitute the conflict.
- The referral of such conflict within an exact period to be negotiated between the managers of each corporation.
- If the conflict is not resolved, the chief executives of each corporation should attempt negotiations in a limited timeframe to address a solution.
- The prospective to proceed to mediation or other forms of dispute resolution
- Arbitration or litigation

Moreover, Cunningham (2013, pp 2-11) has mentioned that selecting contracts can be either by drafting a particular one for the project or utilising a standard form of contract. Thereby, standard contracts are regulated by the industry organisation, regulations and codes, which guides the construction operations towards standard practices by indicating the base for contractual clarifications, project requirements of the construction operations and procedures for dealing with construction conflicts including at least one ADR process, etc.

In Ireland, the standard form construction contracts are used in the vast majority of construction works which are written in the English language, follow the Irish law and if a construction dispute emerges, the venue resolution is habitually in Ireland. According to Peckar & Zicherman (2019, p.59), the most popular standard forms of construction contract implemented in Ireland are shown in Table 1:

Table 1. Main Irish forms of building contract.

IRISH FORMS OF BUILDING CONTRACT	FEATURES	PROVISIONS FOR ADR
A RIAI form of contract including a subcontract form ruled by The Royal Institute of Architects of Ireland (RIAI) ⁴ in conjunction with the Construction Industry Federation (CIF) ⁵ and The Society of Chartered Surveyors in the Republic of Ireland (SCSI) ⁶ ,	Most used standard contract for the private sector. It involves the conditions for building works for the traditional model of construction (Cunninghman, 2013). (p.13)	Mediation, conciliation, arbitration, adjudication (RIAI, 2021).
Engineers Ireland ⁷ form of contract together with a subcontract form	Related to civil engineering activities. It is based on the United Kingdom's Institute of Civil Engineers forms.	Mediation, conciliation, arbitration, adjudication, Expert determination, Dispute Boards (Engineers Ireland, 2021).
The Government Construction Contracts Committee (GCCC) ⁸	Compulsory contracts for the Irish public sector work or where the exchequer issues minimum funding of 50%. It incorporates build-only and design and build for civil engineering and building works, minor works contract and site investigation contract, etc (Cunninghman 2013, p. 13).	Dispute management procedure, conciliation, adjudication, arbitration (Office of Government Procurement 2019, p. 48-50)

⁴ RIAI is an organisation founded in 1839 as an authority for professional body for Architecture in Ireland which regulates and supports the standards for Architects working in Ireland (RIAI, 2021).

⁵ CIF is the representative body in construction in Ireland. It assists its members with information related to the business, political, economic and environmental on a regional and national basis (CIF, 2021).

⁶ SCSI, is a professional body in charge to research issues concerning industry, economic and practice related within construction, land and property in Ireland (SCSI, 2021).

⁷ Engineers Ireland is the largest and oldest professional community in Ireland with over 25,000 members who represent the engineering profession since 1835. Its main function is to provide sustainable solutions for society (Engineers Ireland, 2021).

⁸ GCCC is a discussion forum concerning the constructions of the Irish public sector. It also provides guidance and technical support to grow the national construction procurement policy (Office of Government Procurement, 2021).

IRISH FORMS OF BUILDING CONTRACT	FEATURES	PROVISIONS FOR ADR
FIDIC ⁹ Contracts ruled by International Federation of Consulting Engineers	Type of contract most utilised in Ireland. It encompasses a build-only form of contract, a design and build electrical and mechanical contract and an engineering, acquisition and construction contract.	Dispute avoidance/adjudication boards (DAAB), amicable settlement, arbitration (LexisNexis, 2021).
Joint Contracts Tribunal (JCT) ¹⁰	Building contract for domestic projects and is applicable to the traditional style of contracting in the private and public sector (Cunningham 2013, p.14)	Mediation, adjudication, arbitration (LexisNexis, 2021)
New Engineering Contract (NEC) ¹¹ ,	Suite of contracts most relevant for builders at public and private sector.	Adjudication, dispute avoidance board (DAB), arbitration (LexisNexis, 2021)
Institution of Engineering and Technology (IET) ¹² MF/1	Appropriated for large projects related to electronic, electrical or mechanical plant (LexisNexis, 2021).	Adjudication, arbitration (LexisNexis, 2021)
Management contracts	Types of contracts for build-only model. In Ireland are usually grounded on RIAI form.	Mediation, conciliation, arbitration, adjudication (RIAI, 2021)

On the other hand, Cunningham, (2013, pp. 20-22) has affirmed that no contract is greater than other, so the selection of contracts depends on the specific situations as the nature of the client, client's risk attitude, type of construction model, client's priority, size and type of the project, type of

⁹ FIDIC is an acronym from the French language for *Federation Internationale Des Ingenieurs-Conseils*, an international federation that started in 1913 and its currently conformed by over 94 countries. Its main activity is to produce and update the terms of standard form contracts for the consulting industry in developing countries that have not generated their own standard forms of contract (Hewitt, 2014).

¹⁰ JCT is an operation structure established in 1931 and consists of professional construction-related members who draft the UK building contracts (McMahon, 2021).

¹¹ NEC is a system originated by the Institution of Civil Engineers in the UK whose philosophy is to create contracts to treat all complications of traditional contracts. Therefore, it produces a flexible and modular structure for every contract incorporating project management best practice (NEC, 2021).

¹² IET is an international institution founded in 2006 which is compounded by multidisciplinary engineers from over 153 countries. IET provides counselling in all fields of engineering and its key sectors are design and production, built environment, information and communications, transport, and energy (IET, 2021).

documentation being used, etc. Furthermore, informal contracts can be made by word of mouth or bespoke which are absent of dispute resolution procedures, notwithstanding, the parties are subject the Construction Act 2010 (Cunningham, 2015) or litigation as a default procedure (CIRI, 2021).

1.7 ALTERNATIVES DISPUTE RESOLUTION PROCEDURES, TYPES, ADVANTAGES AND DISADVANTAGES

The Alternatives Dispute Resolution (ADR) are methods to guarantee the essential right of access to justice for everybody in an economical way (Islam, 2014). Thereby, the ADR emerged as the result of the lengthy, expensive and escalating number of cases referred to court (Maru 2019, p. 8). Such methods offer a quicker, cheaper and less confrontational method to resolve disputes by mutual benefice and by the goodwill considering the facts of the conflict in a private, impartial and fair mechanism (Islam 2014, p. 98). Besides, the RICS (2012, p. 7) added that confidentiality, flexibility and less formality are advantages of the ADR methods that allow the remanence of the relationship which in the end provides considerable satisfaction. The ADR procedures allow the parties to have some control, besides there is the easiness to appoint any expert regarding the substance of conflict. Islam, (2014, p. 95) also added that in consequence due to the variety of advantages that the ADR provide, nearly every part of the world has introduced the ADR in their justice system following its massive success.

Over the range of alternatives dispute resolution, the RICS (2012, p. 4) have explained the distinct processes in which all ADR are immersed: (1) Non-formal: The problem-solving efforts by the parties themselves; (2) Statutory: Where a third party intervention doesn't result in an imposition of a binding conclusion on the disputants; and (3) Judicial: The intervention of a third party whose decision is binding on the parties. Figure 3 illustrates the different alternatives dispute resolution encompassed into those 3 pillars.

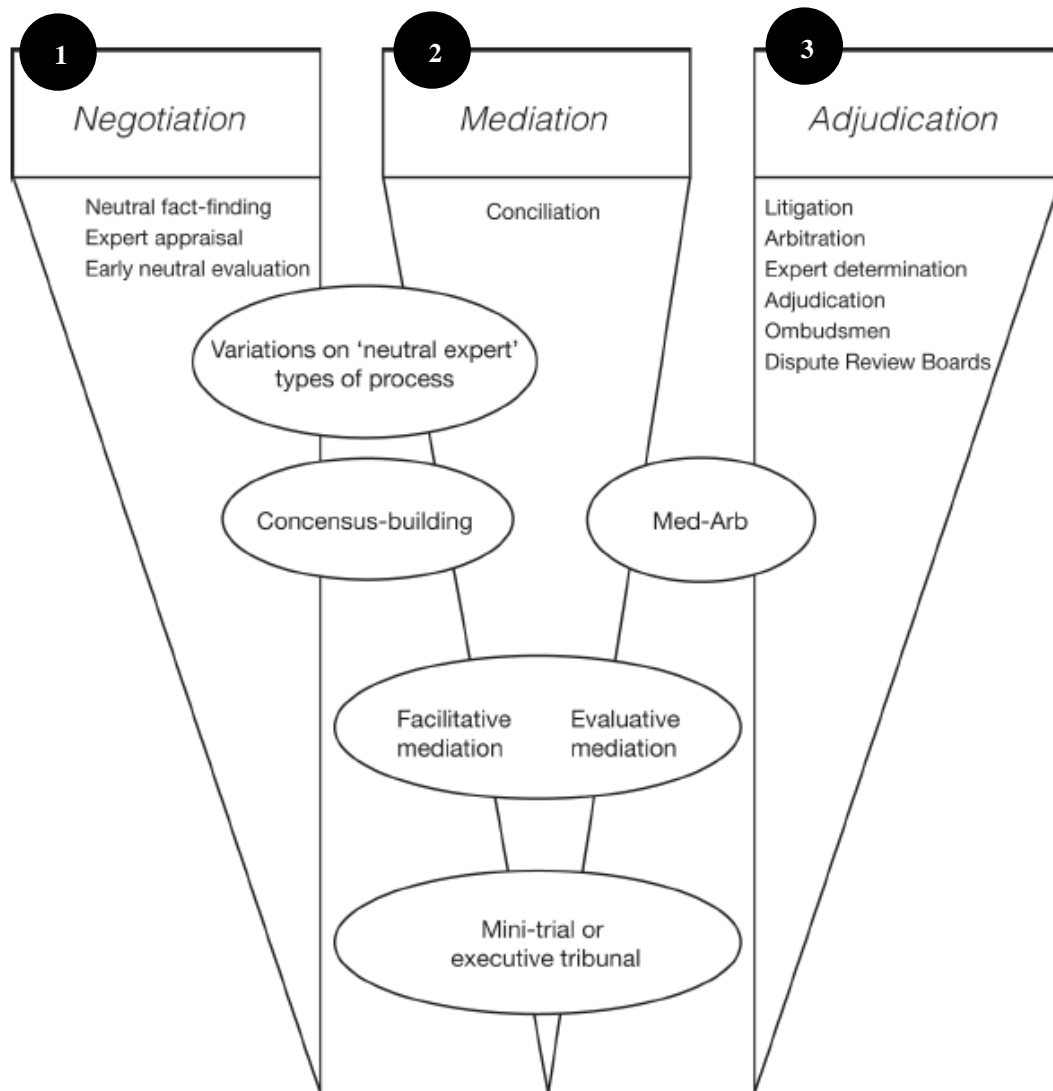


Figure 3. Alternative Dispute Resolution Pillars: (1) Informal, (2) Quasi-formal (3) Formal (RICS 2012, p.5)

Thereby, the RICS (2012, p. 5) have emphasised that it's of utmost importance to take into account when and what assistance is needed in the resolution of such conflict. Figure 4 shows the relation of conflict management and its escalation through the different ADR.

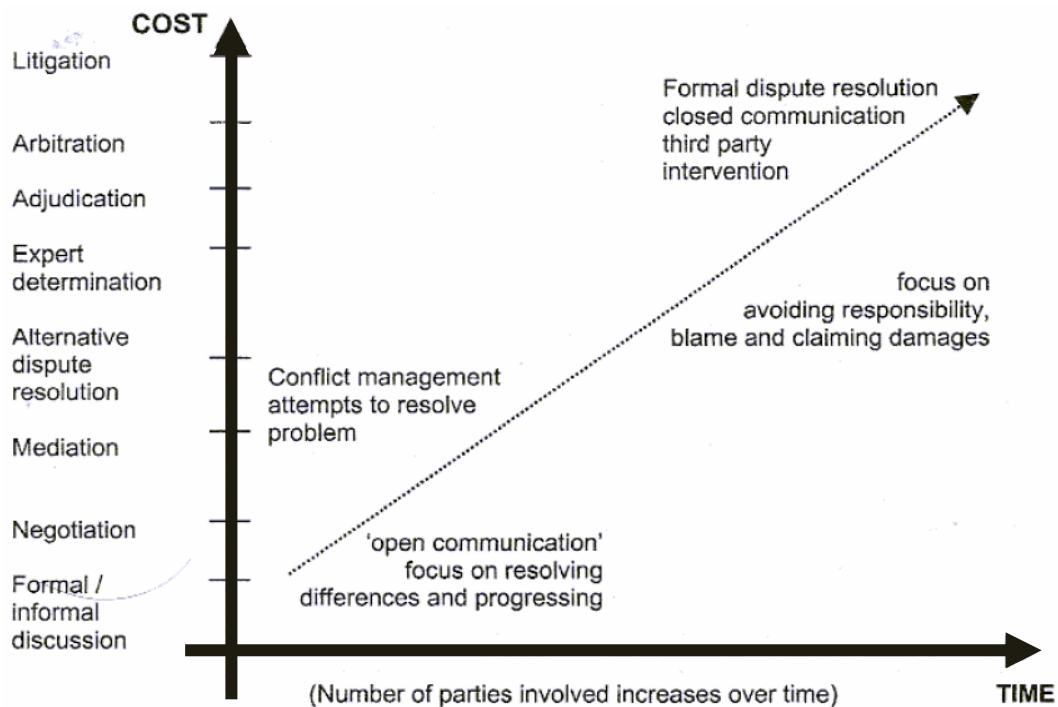


Figure 4. Dispute resolution methods and their relation cost vs time (Cunninghman 2015, p. 4).

Notwithstanding, on the other hand, several critics have been made regarding the downsides of ADR methods, according to work done by Cunningham (2015, p. 8) some of the weaknesses of the such methods are:

- There may be disengagement of the parties to cooperate;
- A third party can be incompetent to effectively assist the procedure (biased, impartial, ignorance of technical/law issues regarding the dispute);
- Resolutions are not always guaranteed;
- Since they are private procedures, there is no way to warn the wrongdoings to the public concerning the company or dispute, etc.

Nonetheless, the ADR techniques may change according to the province and its legal regulations. In Ireland, there aren't special tribunals allocated for construction disputes, however, legal procedures for construction disputes are controlled by the Statute of Limitations Act 1957 which provides a statutory limited time to make a claim under a construction contract allowing parties up to 6 years to

present the claim for a written contract or 12 years if is a deed and if the claims are in regards to an unlawful act there is a claim timeframe of 6 years (Peckar & Zicherman 2019, p 63). Moreover, ADR procedures are provided in the standard form contracts where according to Peckar & Zicherman (2019, p. 62), the mediation, conciliation, adjudication, arbitration and litigations are the most used methods in Ireland for construction disputes, notwithstanding, Cunningham, (2015, p. 1) has added that construction disputes resolution in Ireland are firstly attempted by high-level negotiations and/or conciliation and preceded to arbitration as the last alternative resolution before litigation. Figure 5 shows the escalation of a construction dispute and the methods for its possible resolution.

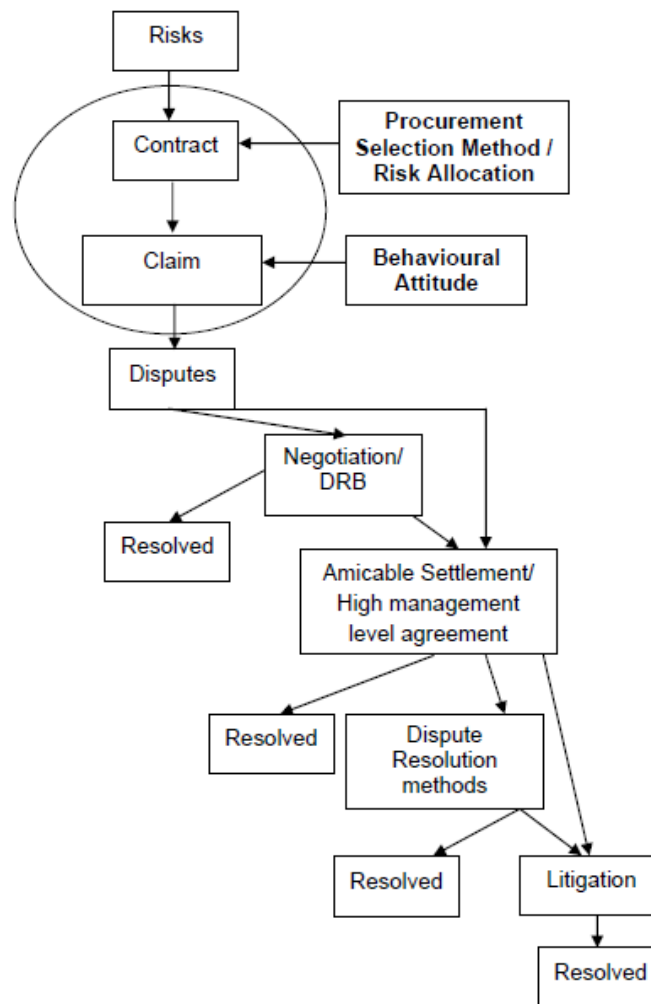


Figure 5. Diagram of dispute escalation and resolution of construction disputes (Younis et al. 2008, p. 735)

1.8 NEGOTIATION

Negotiation is the simplest, most broadly used form of dispute resolution and usually the first attempted problem-solving method in which the parties try to find a common ground to set out a settlement by themselves. This method is informal, less confrontational than other ADR and it doesn't require expertise to perform, although previous preparation is desirable. An ideal negotiation occurs when the parties share their needs and interests with each other through productive communication and revelation of all matters involving the disagreement, so that, a proper comprehension of the facts and the possibility of understanding may allow an empathetic settlement. In other instances, high-level negotiations imply the assistance of a qualified negotiator to enable a practical agreement (Maru 2019, p. 9). Table 2 contains pros and cons of negotiation mechanism.

Table 2. Negotiation, advantages and drawbacks.

NEGOTIATION	
Advantages	Drawbacks
The outcome of the dispute can typically be defined by parties themselves without the assistance of a third party, therefore is a cheaper and swifter method (Maru 2019, p. 10).	The settlement is not always secured if the parties are entrenched in their positions, therefore, an escalated ADR method may be needed (Cunningham 2015, p. 5).
Inexpensive method since is not common to have legal representation of the disputants unless parties decide otherwise (Cunningham 2015, p. 25).	Negotiations may imply continuing cost and management time while attempting to resolve the dispute (RICS 2012, p.5)
Informal, private and flexible process since it can be tailored by the parties (STA Law Firm, 2019).	Lack of legal advice or protection of the parties in dispute (STA Law Firm, 2019).
Relationships may result non-affected since the agreement can be amicably reached (STA Law Firm, 2019).	It may be an imbalance of power among the disputants which can affect the decision making or the practicality and durability of the outcome (STA Law Firm, 2019).

NEGOTIATION

Advantages

Drawbacks

It may be employed as a stalling strategy since parties may be unable to achieve a settlement without the help of a third party (Marion, et al., 2019).

1.8.1 NEGOTIATING CONSTRUCTION DISPUTES

The RICS (2012, p. 19) claimed that in construction contracting, negotiation techniques are usually first attempted to resolve any dispute for an equitable settlement. Marion, et al., 2019 have added that in standard forms of construction contracts, negotiations are provided to be attempted from low to senior levels of management allowing the awareness and offering the opportunity of a more objective analysis, therefore, the possibility of a settlement. Nevertheless, if a settlement is not achieved, any party in a dispute can refer to adjudication or go directly through the arbitration procedure, notwithstanding, some contracts might firstly request to attempt another ADR method less structured. On the other hand, Yates (2011, p. 94) has described that negotiations can be managed during the construction or when the project is terminated, and the method can be either informal and executed by email, video call, face to face, etc. or in a formal manner when there is the presence of lawyers and experienced third parties to assist the process.

According to Yates (2011, p.94), negotiations in construction conflict are usually successful with a percentage of 90 to 95% of settlements in comparison to litigation, moreover, Marion et al. (2019) stated that there are many reasons to secure a practical settlement since the construction industry is sophisticated and the interaction of many experienced workers allow the recognition and management of the risks.

1.9 MEDIATION

Mediation is a process where the outcome is attempted by the voluntary participation of opposing parties and/or their representatives and by the assistance of a third party called the mediator. The mediator, who tends to be neutral and impartial along the process, assists to discover points of common interest to facilitate the negotiation between the parties as they are in full control of the outcome (She 2011, p. 53). Hence, if an agreement is arranged, this will be binding once the parties have stated the terms of the agreement in writing and signed. In the case that a party doesn't honour the terms of the mediation agreement, the other can enforce it through court as a "contractual agreement" (RICS 2012, p. 23.).

The mediation process is governed by the Mediation Act 2017¹³ which compel solicitors to tell the disputants about considering mediation before proceeding to court, as well as about information concerning monetary, time and effort costs at the end of legal proceedings. It also underpins the confidentiality of the process as the prohibition of using the opponent party's revelations/material if the dispute continues to further procedures (Peckar & Zicherman 2019, p. 62). Table 3 introduces the substantial considerations of the mediation process:

¹³ Mediation Act 2017 was enacted on 1 January 2018 and states the fundamentals of mediation as an alternative to civil proceedings. It includes the key principles of mediation: Facilitative, confidential and voluntary, the codes of practice of mediators, the agreement to mediate, the statute of limitations, solicitors' obligations, court intervention, etc. (Mediation Act 2017).

Table 3. Mediation, advantages and drawbacks.

MEDIATION	
Advantages	Drawbacks
Mediators are selected by the parties as an independent and neutral third party who is generally well skilled regarding the area of conflict (Maru 2019, p. 13)	Vulnerability or advantageous positions when parties disclose the information if the matter goes to assessment (Maru 2019, p. 13)
Post-relationships are typically kept since the outcome is decided by the parties themselves (Maru 2019, p. 13)	Although the resolutions are attempted to be reached through this process, they are not always secured since the parties may not agree at all, then time and money have been “wasted” (She 2011, p. 53)
Since the process is confidential, parties talk frankly without prejudice if the dispute goes to further procedures (Cunninghman 2015, p. 11)	There may be ignorance of the relevant laws concerning the case by the third parties since there is no requirement that the mediator has to be a barrister or solicitor to execute the mediation (Peckar & Zicherman 2019, p.62)
Parties can express themselves openly in jointly or separated private sessions (caucus) with the mediator (RICS 2012, p.6)	
Objective criteria are used to test the reality of the parties’ situation (RICS 2012, p. 11)	
Fees of the mediator are estimated in advance by agreement of the parties and mediator (Islam 2014, p. 102)	
Private process, thus, there isn’t adverse publicity (She 2011, p. 52)	
Mediation is not binding until the parties have signed an agreed resolution (Cunninghman 2015, p. 10)	
Unexpensive procedure since it doesn’t require a legal representation of the disputants unless parties decide otherwise (Cunninghman 2015, p. 25)	
Parties have control of the outcome, therefore, is a less stressful and flexible procedure (STA Law Firm, 2019).	

MEDIATION

Advantages

Less risky process since there is potential for win-win outcomes, therefore, more formal procedures are averted.

Drawbacks

Swift procedure since it can be scheduled as soon as the parties want, and sessions ordinarily take few days (Kessler, 2017).

1.9.1 MEDIATING CONSTRUCTION DISPUTES

According to Kessler (2017), mediation is the most recent dispute method utilised in the construction business, and it can be used in the course of the project, after completion or while arbitration or litigation is ongoing. The RICS (2012, p. 11) have stated that one of the most significant advantages of mediation in construction disputes is the fact that the outcome is decided when the parties want, unlike arbitrators or judges, whose decision has no interest regarding timeframes of project completion. In addition, Worth (2020) has indicated that mediation can be attempted even though it is not an option provided in the contract, as a cheaper and quicker method than arbitration, adjudication or litigation. Additionally, McCann, (2019) stated that mediations allow multiples parties and multiples disputes under multiples contracts to be dealing in once conflicts of fairness or equity, for example, related to payments, an extension of time or even multimillion valuation projects can undergo this process, furthermore.

Additionally, in Ireland, the Irish Commercial Mediation Association¹⁴ assists to recommend

¹⁴ ICMA is an Irish non-profit corporation set out in April 2003 and piloted by a Council of 18 members. Its main objectives are the provision and enlargement of mediation with the most updated legal developments concerning mediations, as well as services, training and resources to promote mediations (ICMA, 2020).

the appointment of mediators who can be found in the Panels of Mediators provided by professional bodies (CIRI, 2021).

1.10 CONCILIATION

Conciliation is very similar to mediation, however, She (2011, p. 52) has defined that the difference lies that conciliation is a more evaluative process rather than facilitative and parties are not bound by the rights and obligations established in their contract in seeking for a compromise on their individual postures. Conciliation, is, therefore, a process in which a neutral and impartial third party, a conciliator, assist the voluntary parties in dispute to understand each other's view, explore their strengths and weaknesses and correct perceptions. Then the parties attempt to reach an agreement by a fair negotiation where the conciliator doesn't assign her/his point of view but uses of objective criteria to check the reality of the parties' matter (RICS 2012, pp. 5-11). Nonetheless, if the parties are not capable to settle, the conciliator can issue a formal recommendation as a way to attempt a resolution, such recommendation will usually be binding unless parties agree otherwise within a timeframe limit (Cunningham 2015, p. 9). Table 4 presents the principal upsides and downsides of the conciliation methods:

Table 4. Conciliation, advantages and drawbacks.

CONCILIATION	
Advantages	Drawbacks
Parties can express themselves openly in private sessions with the conciliator or together (RICS 2012, p. 6).	Conciliator's recommendation will be binding unless a party disagrees with it (Peckar & Zicherman 2019, p. 62).
The third party does not impose a binding decision, unless the parties agree (RICS 2012, p. 6).	If the dispute is not settled by conciliation, another resolution attempt can be done through an escalating ADR, therefore, efforts and time have been wasted (Peckar & Zicherman 2019, p. 62).

CONCILIATION

Advantages

Drawbacks

Parties agree on the selection of the independent and neutral third party who typically is an expert in the dispute area (STA Law Firm, 2019).

There isn't a possibility to appeal a conciliator decision once is binding (STA Law Firm, 2019).

Objective criteria are used to test the reality of the parties' situation (RICS 2012, p. 11).

Unexpensive method since costs are frequently shared. The average costs are about 10% if compared to litigation or arbitration costs (Cunninghman 2015, p. 12).

Quick procedure, since it doesn't take more than two days to notice the likelihood of conflict resolution while conciliating (Cunninghman 2015, p. 12).

Confidential process, therefore, any evidence submitted during the process won't be admissible to subsequent proceedings (Cunninghman 2015, p. 12).

Economical procedure since it doesn't require a legal representation of the parties unless parties decide otherwise (Cunninghman 2015, p. 25).

Informal and flexible method since allows parties to define the scope of the proceeding (STA Law Firm, 2019).

Parties still have the opportunity to attempt other ADR methods if unsatisfied with conciliation (STA Law Firm, 2019).

1.10.1 CONCILIATING CONSTRUCTION DISPUTES

In Ireland, conciliation was developed in the mid 1980s and incorporated in nearly all standard contacts forms as a mandatory step before arbitration proceedings, besides, according to

Cunninghman (2015, p. 13), it's also been the most common method to resolve disputes concerning public work construction contracts. Thereby, In Ireland, a conciliator is assigned to assist such disputes on contracts evaluated over €10 million and this can be selected from the panels of Conciliators provided by regulatory bodies as CIF. Moreover, CIRI (2021) has asserted that under the Government's Public Works Contract, a conciliator who can provide a recommendation has to be based on principles of common law or equity and on the rights and obligations of the parties.

On the other hand, Peckar & Zicherman, (2019, p. 62) has stated that in the case the construction dispute is not settled, the parties have to follow the next stage of the contractual dispute resolution clauses. Notwithstanding, the work of Cunningham (2015, p. 93) has presented statistics of 95% of success of conciliation in Irish construction disputes, so that, there has been an avoidance of arbitration procedures.

1.11 ADJUDICATION

Adjudication is an adversarial process in its nature, which, unlike some other ADR methods, the outcome is imposed by a third party although the proceedings are less formal than arbitration or litigation (Maru 2019, p. 10). The neutral third party called adjudicator is appointed by the agreement of the parties or by professional bodies if an agreement is unreachd. She (2011, p. 53) described that the adjudicator sets the procedure, conducts the parties to a hearing where they can discuss the claims against each other, then, the adjudicator has 28 days to provide a decision and define details as the amount of money, if any, due dates owed to the claimant party, etc. Adjudicator's decisions are binding in the meantime unless the dispute goes further to arbitration or litigation or parties have reached a different agreement or if the decision is annulled by constitutional action (Cunninghman 2015, p.15). Notwithstanding, Maru, (2019, p. 10) has stated that despite many cases are usually resolved utilising adjudication, parties in dispute can proceed to arbitration or litigation if they feel

dissatisfied by the outcome. Table 5 presents the pros and cons of the adjudication methods:

Table 5. Adjudication, advantages and drawbacks.

ADJUDICATION	
Advantages	Drawbacks
Parties have the opportunity to appoint the adjudicator to treat their dispute (Cunninghman 2015, p. 25).	The outcome of the dispute is decided by the adjudicator; therefore, the result can cause damaged business relationships (Maru 2019, p. 10).
Cost savings since the process doesn't require a legal representation of the parties unless parties decide otherwise (Cunninghman 2015, p. 25).	Parties in dispute can proceed to arbitration or litigation if a settlement is not achieved (Maru 2019, p. 10).
Dispute outcome is obtained within a short period of time allowing cash flow (Law Society of Ireland 2018, p.29).	There is concern about the quality of adjudicator to deal with the process and impose a decision (McCann, 2019).
Parties typically accept the adjudicator's decision, therefore, arbitration or litigation can be avoided (Law Society of Ireland 2018, p. 29).	Adjudication's outcome is just temporary finality pending arbitration or litigation (McCann, 2019).
	The courts frequently support the adjudicator's decision, even if the decision is erroneous (Law Society of Ireland 2018, p. 29).

1.11.1 ADJUDICATING CONSTRUCTION DISPUTES

Adjudication is very often used in construction disputes and although the results of adjudication are "rough justice", this process allows cash to flow the project and may result on the resolution of the construction dispute (Cunninghman 2015, p. 14). Furthermore, Peckar & Zicherman (2019, p. 61) have affirmed that this ADR method is appointed in *The Construction Contracts Act 2013*, where a party can remit payment disputes under construction contracts in spite of any ADR stated in the contract. The Act is applicable for contracts valued over €10,000 and for residences over

200m², it also provides information regarding a timetable to obtain the decision/settlement within 28 days and a possible extension of 14 days with the referring party's consent, or a longer period if parties agree although there is a sanction for this request. Additionally, CIRI (2021) has declared that in Ireland, if the adjudicator is not agreed by the parties, the appointment would be by the Chairperson of the Construction Contracts Adjudication Panel. In addition, *The Code of Practice Governing the Conduct of Adjudications*¹⁵ in accordance with the Construction Contracts Act 2013 provide detailed information for the execution of adjudication in Ireland.

1.12 ARBITRATION

Arbitration, subject to statutory jurisdiction, is a mini-trial where an impartial and independent third party termed “the arbitrator”, generally experienced in the dispute field, decides over a commercial dispute outcome (She 2011, p. 52). According to STA Law Firm (2019), arbitration was developed in the UK around the 18th century as a less formal process than the litigation in which parties may participate voluntarily or compulsory (under a court order or referred in a clause of a contractual agreement). Additionally, the RICS (2012 pp. 5, 14-15) have pointed that the process involves the display of parties' proofs, so that, the arbitrator can make a decision based on the revision and hearing of the evidence and witnesses, as well as establishing the balance of probabilities, the facts and administering the law. Thereby, the arbitrator can issue an “award” that is definitive, binding, and enforced under legislation unless the parties agree on the opposite. Once the arbitrator's decision is produced, it is difficult to appeal it or it must be under very limited circumstances as errors of law or irregularities formulating the ultimate decision. Thereby, in those cases, a party can appeal

¹⁵ The Code of Practice Governing on the Conduct of Adjudications is a statutory code published on 25 July 2016 as the latest version which regulates the direction of adjudications emerging under the Construction Contracts Act 2013. The code describes the procedures for appointing an adjudicator, the adjudicator responsibilities, adjudication implications, costs, etc (Heneghan & Byrne, 2016).

to the High Court within three months after the award is decided (Cunningham 2015, p. 23). The arbitration process, therefore, applies when the parties accord to arbitrate a dispute by a written agreement then the case is referred to the *Arbitration Act 2010*¹⁶. Moreover, STA Law Firm (2019) has declared that once the parties have engaged in arbitration, unlike the other ADR methods, they cannot withdraw from the procedure. On the other hand, if the dispute is between cross-border legislation and members of trade associations, *The United Nations Commission on International Trade (UNCITRAL)*¹⁷ *Model Arbitration Law* will rule the procedures (RICS 2012, p. 6). Table 6 provides substantial aspects concerning the arbitration procedures:

Table 6. Arbitration, advantages and drawbacks.

ARBITRATION	
Advantages	Drawbacks
Confidential and private procedure since it doesn't allow the media or reporters (RICS 2012, p.18).	Parties are bounded to the arbitrator's decision which can be enforceable by the court (Maru 2019, p. 11).
The appointed arbitrator has usually related knowledge over the dispute substance and can be agreed by the parties or an appointed institution if the parties are unable to accord (Maru 2019, p.12).	Restricted circumstances to appeal Arbitrator's ultimate decision such as fraud or irregularities concerning the arbitrator (Maru 2019, p. 12).
Parties are allowed to design their own procedure for the arbitration subject to statutory provisions (Maru 2019, p.12).	Parties' accountability to pay the fees for the arbitrator and the venue where the arbitration is arranged (Maru 2019, p.12).
According to section 21 of the Act 2010, parties may agree on how the costs are going to be handled (Cunningham 2015, p. 22).	The arbitrator is unable to arrange private meetings with each party (RICS 2012, p. 17).

¹⁶ Arbitration Act 2010 was enacted on 8 June 2010. The Act is applicable to the domestic and international arbitration process and provides the legal framework of arbitration, the recognition of the procedure, the arbitrator, the award and its enforcement. (RICS 2012, p. 6)

¹⁷ UNCITRAL Model Law serves States in adjusting and updating the needs and characteristics of international commercial arbitration. Such a model has the force of law in Ireland (under the Arbitration Act 2010) (Cunningham, 2015).

ARBITRATION

Advantages	Drawbacks
Parties can arrange the time and location of the arbitration procedure (Cunninghman 2015, p. 24).	Although the Arbitrators have to be familiarised with the law of arbitration, they are unrequired to have a legal profile, so that, it may lead to ignorance in addressing legal issues (Cunninghman 2015, p. 21).
Less confrontational than litigation, therefore, it may allow the remanence of the business relationships (Cunninghman 2015, p. 24).	The evidence is restricted and ruled by the arbitrator who determines the admissibility, weight and relevance of the case (Cunninghman 2015, p. 22).
Flexible, economically feasible and quicker process than litigation (STA Law Firm, 2019).	Legal representation has an influence on the settlement; therefore, their fees are extra expenses for the parties (Cunninghman 2015, p. 25).
	Through the years, arbitration has become lengthy, costly and legalistic which better suits high-value disputes (CIRI, 2021).
	Scheduling an arbitration procedure can endure weeks as well as to obtain the final hearing (Kessler, 2017).

1.12.1 ARBITRATING CONSTRUCTION DISPUTES

Maru (2019, p. 7) has explained that although many construction conflicts can be fixed by the adherence of the contract and the compromise of its clauses or by the negotiation among the stakeholders if the conflict continues, the ADRs offer a way to conflict resolution into the construction business where nowadays arbitration is the last ADR method preferred before court proceedings because it's an expensive and protracted procedure. Arbitration clauses have been frequently incorporated into standard form contracts, however, since the growth of ADR around the 1990s and the incorporation of adjudication in 1998, the tendency has changed to utilise the mediation,

conciliation or adjudication as the initial methods to attempt construction disputes (RICS 2012, p. 19).

On the other hand, International Commercial Arbitration services are utilised on numerous Standard construction contracts. The most popular contracts are generated by FIDIC, a standard form of contract, in which if a construction dispute arises under such contract, this will be referred to the rules of the International Chamber of Commerce (ICC¹⁸) for its final resolution by an arbitral tribunal. Notwithstanding, RICS (2012, p. 15) have mentioned that numerous construction projects are financed by international banks, therefore, contractors and consultants are frequently from other jurisdictions, so that, it is common that a construction project is under a different law from the country where the project is being developed.

Construction disputes over invoices matters, delivery times or technical issues (building/engineering issues, unconformity with specifications) are instances that may be referred to arbitration (Kirschner, 2019). Cunninghamman (2015 p. 21) has claimed that construction disputes in Ireland are governed by the *Arbitration Act 2010* where there is a preference to utilise Irish law and Ireland as the seat of arbitration procedure. Moreover, arbitrators are usually appointed in the construction contracts by a professional body, for instance, IEI, the President of (SCSI) or (RIAI), or Chartered Institute of Arbitrators¹⁹. Moreover, Peckar & Zicherman (2019, pp. 62-63) have specified that Ireland is a member of the New York Convention²⁰ on the Recognition and Enforcement of Foreign Arbitral Awards in 2010 Act, thus, Irish Courts have been supportive of the enforcement of

¹⁸ ICC (International Chamber of Commerce) is a global business organisation integrated by over 100 countries whose primary activities are police advocacy, rule-setting and the assistance to resolve conflicts in international commerce through the International Centre for Alternatives Dispute Resolution (RICS 2012, p. 15).

¹⁹ Chartered Institute of Arbitrators (CI Arb) is an international organisation not-for-profit, UK registered, which is compounded by over 149 countries for the practice and profession of ADR providing training to mediators, adjudicators and arbitrators (CI Arb, 2021).

²⁰ New York Convention came into force on 7 June 1959 and currently has more than 168 contracting States. NYC is a treaty in international trade law that issues common legislative standards for the recognition and enforcement of an arbitral award when resolving international commercial disputes in the same manner as domestic awards. It also guarantees that Courts of Contracting States respect valid arbitral agreements and stop court proceedings where parties have agreed to engage in the arbitration procedure (New York Convention, 1958).

arbitral awards.

1.13FACTORS OF CONSIDERATION WHEN ATTEMPTING AN ADR METHOD

Many studies have been developed to evaluate the aspects of ADR from different preambles as monetary, social, human, etc. Nonetheless, the works of She (2011) and Maru (2019) appoint substantial factors to consider when parties attempt a conflict resolution through an ADR method. Such criteria are presented below:

- **Cost:** One of the most critical factors to take into consideration when selecting an ADR method as it has an impact on the profit share of the result. The best evaluation of this fact is through a study of cost/benefit and the value of the case in dispute if the dispute is unresolved. The costs typically involve the agreement of all expenses of the ADR method, including the agreement, fees for the third party, documentation, revenue and settlement expenses.
- **Speed:** This is a substantial fact to be considered as the attributes of dispute resolution; the longer the process takes to resolution, the more expensive it becomes, and in business matters, money remains a priority.
- **Openness, Neutrality and Fairness:** The Fairness and neutrality of the ADR are strongly attached to the experience, competence and ethics of the third party. The third party performs a significant role in the process since has to remain unbiased and impartial toward the parties throughout the process. Third parties must not have any previous relationship with any party, otherwise, their reliability can be doubtful. Moreover, the third party is frequently selected by the parties which serve the parties to feel comfortable and trustable, so that, the parties may achieve an easier settlement.
- **Confidentiality and privacy:** Confidentiality is a core feature of the ADR where parties are unallowed to disclose any information, documents or evidence regarding the dispute case

unless all parties agree. Furthermore, privacy is a key value of human dignity and a substantial fact to business dealings as the procedures are held in private rather than publicly.

- **Outcome:** The outcome of a dispute is the final closure of the ADR process and measures the effectiveness of the ADR methods without the need for further formal procedures.
- **Enforceability:** Related to the outcome with which parties are generally bounded with. However, the enforceability of a contract settlement can have two sides; the advantage that the settlement cannot be breached by the parties and sanctions will be taken, or the difficulty to appeal a faulty outcome.
- **Preservation of Relationships:** Maintaining a business relationship is a key aspect after a dispute has arisen, especially in the business sector. The relationships are based on similar interests, esteem, trust and commitment to make the relationship perdurable for the current and future works.
- **Degree of Control by parties:** If the parties feel with a certain level of control over the ADR process, the confrontational positions are relaxed, consequently, they can set on an agreement in an easier, swifter and cheaper manner.
- **Flexibility:** The non-binding nature of the ADRs processes causes people feel motivated and therefore cooperative to seek a convenient resolution. Other instances of flexibility criteria, if applicable according to the method, are in relation to the selection of the third party by the parties in dispute, the venue and time meetings, the scope evidence, the outcome, etc.
- **Limited Discovery:** This criterion is unapplicable to all ADR, however, in the processes in which is allowed, the discovery shall be always compiled in a partial manner. In some instances, the discovery can be seen as a benefit or drawback; all depends on the discovery restraints, the time and cost invested in this practice.
- **Ability to Appeal:** In the applicable ADR, appealing is the option where a party can request a revision by a higher jurisdiction of an ADR outcome to overturn an official decision. This

aspect is fundamental to consider if any party feel the outcome was unfair or a fraud.

- **Wide range of issues:** When selecting the ADR, the method should be efficient to address all the issues involved in the dispute and ensure conflicts are not incremented or repeated in the future.
- **Width of Remedy:** This criterion strongly depends on the skills of the third party. The third party can help in providing creative ideas for parties' mutual understanding, and by the use of reality testing when explaining the pros and cons of the possible outcome, therefore, the parties will be encouraged to implement practical and durable decisions.

1.14 SUMMARY OF THE LITERATURE

It has been evident that construction conflicts are challenging situations that threaten the success of a project to culminated on time as it was planned. Notwithstanding, if any conflict arises during the project, must be served and managed as per contract statements. In Ireland, there are eight predominant types of building standard form of contract which contain dispute resolution clauses providing the steps that need to be undertaken if a conflict arises. Although the litigation is a procedure that is by default in any dispute, Irish building standard forms of contract typically contain two or more ADR methods that have to be followed in order and according to conflict escalation. Thereby, the ADR are methods to access justice in a quicker, cheaper, more flexible and less confrontational, unlike conventional litigation. Furthermore, regardless of the type of conflict and number of parties involved, dispute resolution clauses usually appoint negotiation as the first method to attempt a resolution, but if the dispute remains, negotiations of high-level hierarchy may be followed. Subsequently, the conciliation is the second method most commonly appointed in the Irish building standard contracts form as a quasi-formal method where parties can be assisted by a third party to negotiate a resolution or a recommendation is given. If the conflict still endures, then usually

arbitration or another formal procedure will be followed by the imposition of a binding decision made by a third party.

Consequently, knowing the root causes of a conflict can help in the prevention or avoidance of it. Alternatively, its management through an ADR can be attempted, especially if it is in an early stage, which could result in less monetary, time and energy expenses. This research explores the principal causes of construction conflicts in Ireland and evaluates the efficiency of ADR methods in the Irish building contract. The efficiency of ADR focuses on the effectiveness of the process ensuring the methods are viable to resolve a dispute and obtain justice without the need for court litigation.

In large, this research focuses to overcome the gaps of the literature since there is not broad information about a comparative study of the efficiency of ADR methods in Ireland, especially in the construction sector where vast amounts of money are invested and in which conflicts are almost inherent in each project. Notwithstanding, subsequent research can be undertaken towards the evaluation and management of risks in constructions as well as the reviewing the contract clauses to provide a wider criterion of unpredictable issues that could arise and ensure are covered under the contract.

CHAPTER 2: RESEARCH METHODOLOGY AND METHODS

2.1 INTRODUCTION

This study was carried out in Ireland. The data employed in this research were obtained from primary and secondary sources. The primary data were extracted from a survey addressed to the Irish construction industry in general, while the secondary data were captured from the review of the recent literature of trustable sources including articles, books, websites, journals, etc. The qualitative and quantitative analysis were developed from the responses of a questionnaire survey conducted in an online form in which prime aims were to examine the current causes of conflict in the construction sector in Ireland, to determine the efficiency of the ADR methods to solve such disputes and to explore the respondent concerns when attempting a dispute resolution through an ADR method. Thereby, both data types assisted to formulate the conclusions of the present research based on valid and reliable grounds.

2.2 PHILOSOPHY

The ontology of this research was based on a relativism philosophy. According to Al-Saadi (2014), the reality is shaped by the context and not only one truth exists as realism philosophy implies. Moreover, the epistemology underlying the research was through an interpretivism approach where there was interaction with people in order to know the truth, in this case, the construction industry. Otherwise, in the realist approach, the researcher stands back from the study taking an outside's view of the research which can result in biased results (Scotland, 2012). A survey compounded of structured questions represented the strategy to collect reliable and valid responses.

2.3 APPROACH

Inductive and deductive approaches were employed to complement the findings of the present research. While quantitative data is based on words and perceptions which aim is to test previous theories, quantitative data can be counted and enumerated to develop a new theory (Burney & Saleem, 2008). The survey utilised in this research was integrated into 12 questions allowing most answers to be analysed by qualitative merits, however, one question requested to rate the perceived importance of some aspects of the ADR, so that, quantitative analyses was needed to provide a ranking scale. Notwithstanding, according to DeCarlo (2018), studies can begin with a deductive approach and proceed to an inductive approach, which together can provide a better understanding of the study.

2.4 STRATEGY

DeCarlo (2018, p. 298) has stated that survey questionnaires are a quicker and focused method to collect reliable data. Thereby, a questionnaire survey was the strategy elected to discuss characteristics of a large and representative group as the Irish construction industry for the purposes of this research. Moreover, the standardized questionnaire contained questions with predetermined response options that allowed obtaining categorical data divided into two sets, the descriptive (nominal) where frequencies and percentages are associated, and the ranked (ordinal) which data can be ordered according to a range (Saunders, et al., 2009).

2.5 CHOICE

Mixed-method was the research choice since the qualitative results of the survey could be complemented by a quantitative component. DeCarlo (2018, p.190) has declared that the combination

of both choices eases the understanding of different aspects of the same phenomenon. Conversely, as stated by Ross (2017), a monomethod choice would limit the scope of research while a multimethod implicates extended periods of time to triangulate the information.

2.6 TIME HORIZON

The time horizon was cross-sectional since the research was developed between the months of March to May 2021, otherwise, according to Zafeiti & Mohamad (2015), longitudinal studies require extensive periods of time to get results which its reliability is doubtful.

2.7 POPULATION AND SAMPLING

The participants in this research have been selected on a non-probability technique and purposive sampling as the population of interest was limited to the Irish construction sector. Surveys were sent out to 3,072 people, and the responses were 45, the rate of responses was considered low but it was worthily representative of the sector at stake. The sample frame involved forty-five respondents that included contractors, subcontractors, consultant representative, clients, architects, engineers, project managers and high command people related to construction work, etc. The participants were contacted online via e-mail and were informed about the aims of the study, the confidentiality of their responses and the ethical principles on which the research is based.

2.8 DATA ANALYSIS TOOLS AND TECHNIQUES

The qualitative and quantitative data obtained from the survey were visualised through the bar and pie charts utilised to represent the differences between categories, while a stacked bar chart

compared rankings. Additionally, Microsoft Excel served to handle the information collected from the surveys as a versatile tool to calculate frequencies and percentages of different data classifications.

In regards to the quantitative data analysis, calculations were performed through the Relative Importance Index (RII) to determine the principal concerns when disputants attempt an ADR method in Ireland. According to Mamata et al. (2016, p. 1174), the RII assists to ascertain the relative importance of aspects in which all phenomenon criterion can be included and be weighted individually. Thereby, the rating scale of nine criteria measured ranged from one as the lowest perceived importance, while five was the highest. The respondent's ratings were computed and converted in RII for each criterion. The mathematical formula is:

$$RII = \frac{\sum w}{A \times N}$$

where $\sum W$ is the weighting of each criterion by all the respondents, A is the highest range (in this case is five) and N relates to the total quantity of respondents.

2.9 RESEARCH LIMITATIONS

Through the primary and secondary research, the study seeks a better understanding of the current Irish construction context to effectively prevent or manage conflicts, nonetheless, the implications of the approaches and philosophies taken in this research begin from the interpretivism philosophy in which, as reported by Scotland (2012), the primary data resulting cannot be generalised and don't represent the population as a whole, nevertheless, it may apply to similar contexts. Additionally, Babu (2019) has stated that although a survey can provide precise and original

information, it limits the subject area due to the absence of detailed information. On the other hand, the research limitations can also be affected by the non-probability sampling since according to Harper (2012), this type of sampling doesn't define how correct the representation of the population is, thus, the findings cannot be generalised. Consequently, purposive sampling might involve a sampling bias since respondents may be prejudiced about the subject, so that, the findings could be exaggerated. Notwithstanding, the criteria for selection were particularly of the population of able interest to provide accurate information to fit and render the research subject.

CHAPTER 3: PRESENTATION OF THE DATA

The presentation of the data is through a graphical presentation as an appropriate technique for examination of the collected responses from the survey and its statistics calculation. Quantitative data were transformed into numbers by codification and typing on Microsoft Excel, so that, the data were computed by employing simple average mean and percentages. From there, the data are presented in the form of frequencies tables and bar and pie charts enabling an easier projection and understanding of the results. Consequently, this analysis technique helped to observe key themes and current patterns in relation to construction conflicts, methods of dispute resolution and concerns while using an ADR method in the Irish construction industry. The research validity and reliability of results are secured by the data from the questionnaire survey and the primary and secondary data selected from trustable sources altogether.

From the 3072 surveys sent out, only 45 participants answered back. From those 45 people, only one assured not to have experienced a conflict within a project in the construction industry. Hence, the data presented in this section is based on the 44 responses experiencing conflict in the construction sector.

Main causes of construction conflict

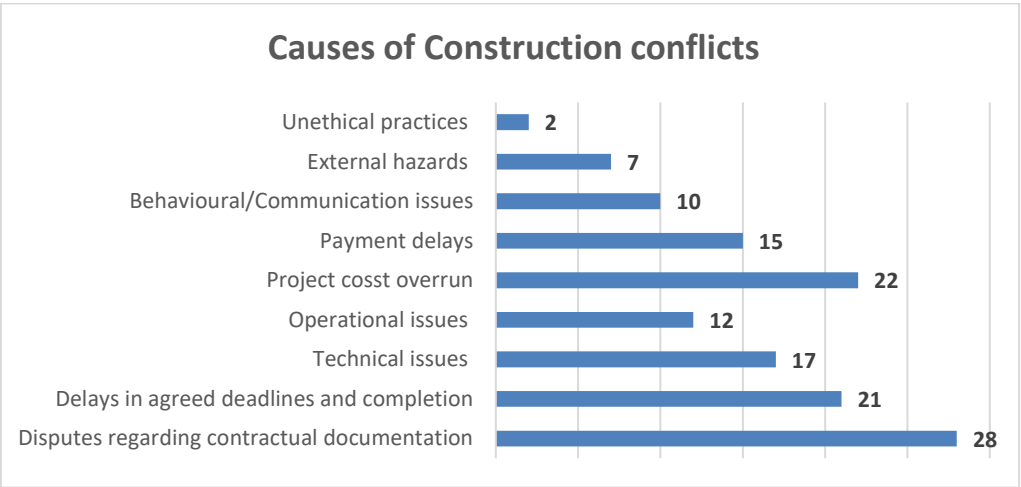


Figure 6. Main causes of construction conflicts in Ireland.

As shown in Figure 6, participants were asked to point all the relevant causes of conflict in their construction projects. Contractual documentation issues represented the most popular cause of dispute in the Irish construction sector, while unethical practices were the least common. This survey question was helpful to obtain a clearer idea of the root causes of construction conflicts, hence, to identify an easier way to resolve or prevent further disputes.

Main parties involved in the construction conflict

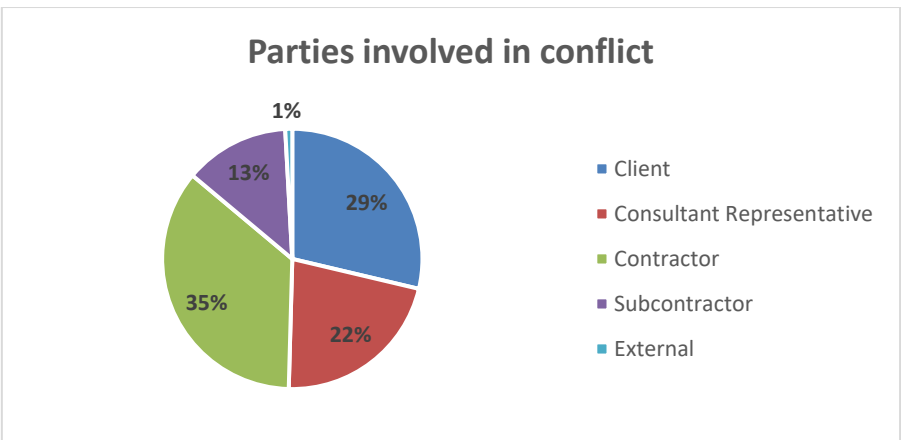


Figure 7. Main parties involved in a construction conflict.

The survey requested participants to point all the parties implicated in the construction conflict. Thereby, respondents appointed that contractors and clients were the parties most involved in construction conflicts as shown in Figure 7. This information can assist to establish particular attention on the play roles of each party as well as their responsibilities and entitlements within the construction work.

Approximated size of the construction project where the dispute arose

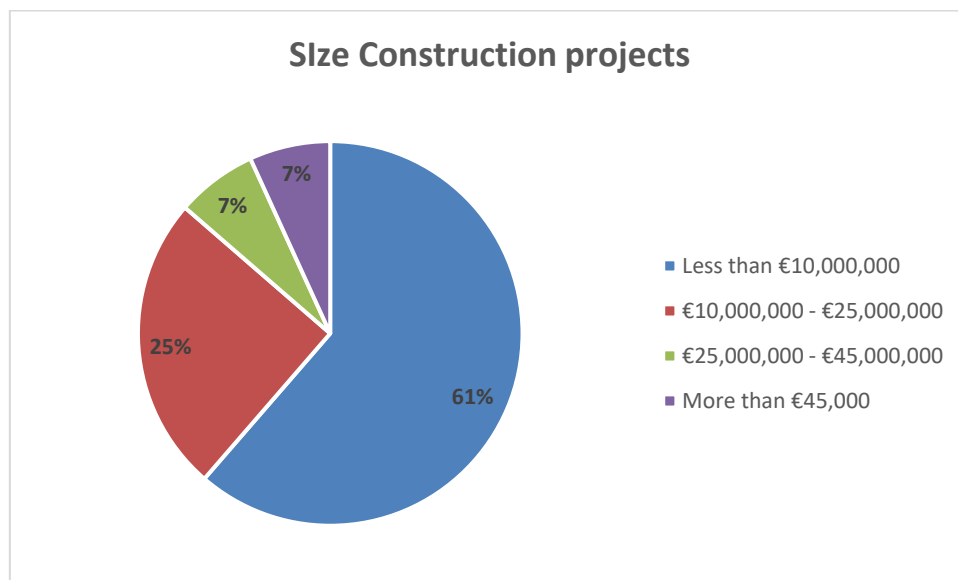


Figure 8. Approximated size of the construction projects experiencing a dispute.

Figure 8 indicates that 61% of the construction projects experiencing a dispute were valued at less than €10,000,000. Notwithstanding, knowing the size of the projects allows to produce an analysis of profitability when utilising an ADR method, that is, a way to calculate the money invested in conflict resolution vs the total price of the project.

ADR methods to solve a construction conflict

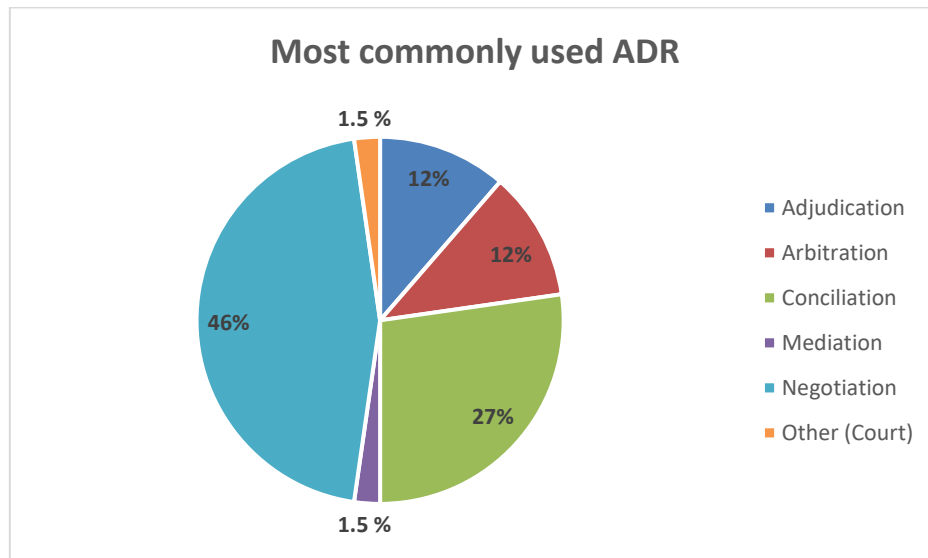


Figure 9. ADR commonly utilised in construction disputes in Ireland.

As shown in Figure 9, negotiation with a 46% rate was appointed as the most common ADR attempted in the Irish construction industry, whereas mediation was the least popular with a 1.5 % rate. Notwithstanding, knowing the most popular ADR methods may indicate a sign of attributes or benefits as effectiveness, practicality, etc. among the mechanisms to access justice.

Length to the dispute resolution

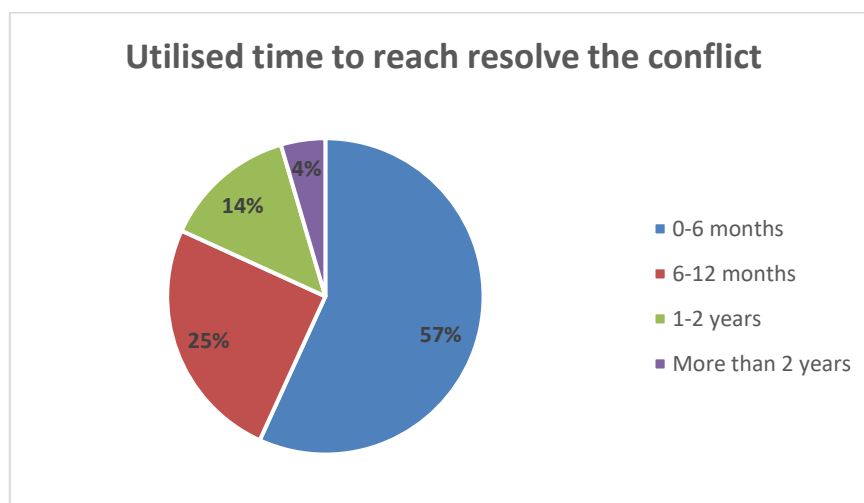


Figure 10. Duration to reach resolve a conflict through an ADR

According to Figure 10, the duration to resolve a conflict was mostly within a period of 0-6 months, while the least number of responses were related to resolution time of more than 2 years. The obtention of this information is useful as an aspect that measures part of the efficiency of the ADR methods.

Direct costs average utilised by the ADR method

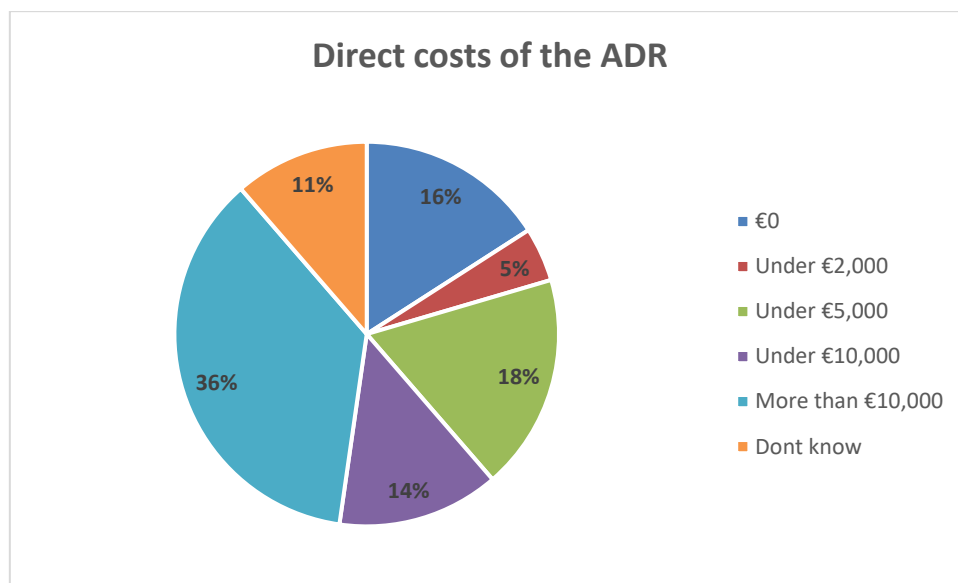


Figure 11. Direct costs invested when utilising the ADR method.

The direct costs include the fees and expenses paid to lawyers, claim consultant, accountant, travel and telephone, postage, etc. were mostly over €10,000 as indicated in Figure 11. This data can be useful to realise an analysis of the cost/benefit vs the size of the construction project in order to measure the overall gains when attempting the conflict resolution.

Effectiveness of the ADR chosen

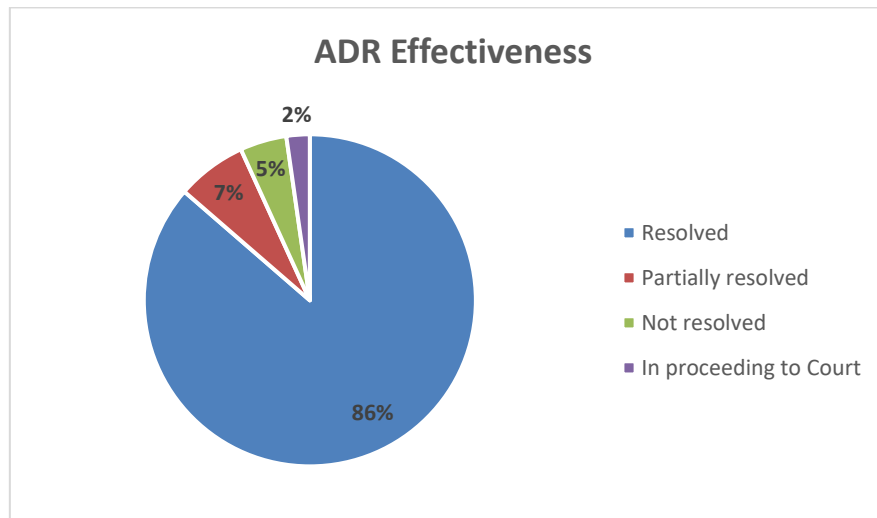


Figure 12. Effectiveness of the ADR methods.

Figure 12 shows an 86% rate of respondents whose conflict was resolved, then, a 7 % of the rate of conflicts partially resolved and 5% of not resolved. This study includes the estimation of the effectiveness of the ADR methods as another substantial aspect that measures if the method accomplishes its principal objective of fully terminate a conflict or not.

Relationship impact after the use of ADR

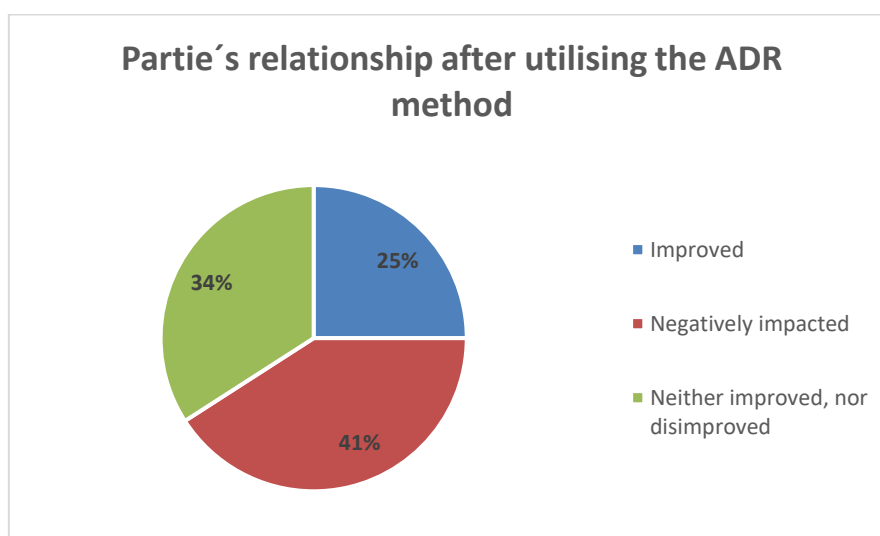


Figure 13. Business post-relationship.

Following the criteria to assess the satisfaction and general efficiency of the ADR methods, Figure 13 shows a rate of 41% of respondents stated that their relationships were adversely affected after utilising an ADR method, while the lowest rate indicated an improvement of the post-relationships.

Satisfaction of the ADR outcome

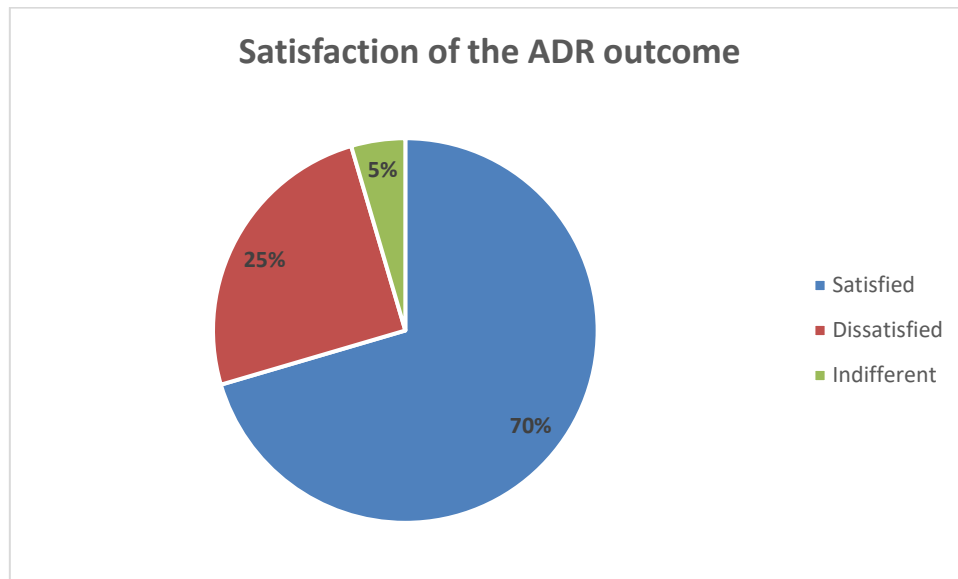


Figure 14. Satisfaction of the ADR method used.

As shown in Figure 14, the majority of respondents, 70%, were satisfied regarding the ADR outcome, followed by 25% of dissatisfaction and 5% of indifference. Thereby, satisfaction is a part of the efficiency of a process since it measures the fulfilment of claim expectations.

Earnings obtained by the utilised ADR method

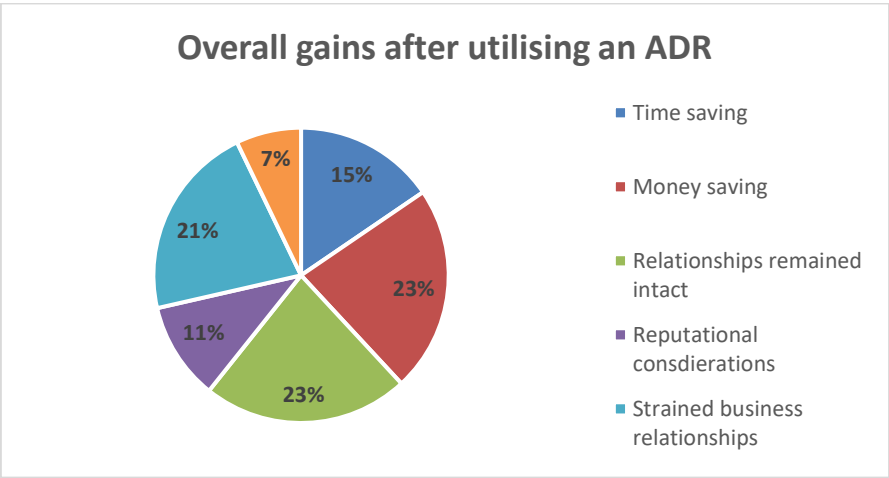


Figure 15. Gains obtained after the utilisation of an ADR method.

The survey respondents were asked to choose all relevant gains when utilising an ADR method which was helpful to obtain broad perspective data for the research. The answers appointed to money saving and intact post-relationships, both as the most popular gains by a 23% rate, followed by strained relationships by a 21%, 15% stated to obtain time savings, 11% reputational considerations and 7% specified to get only the resolution of the conflict.

Perceived concerns when attempting an ADR method

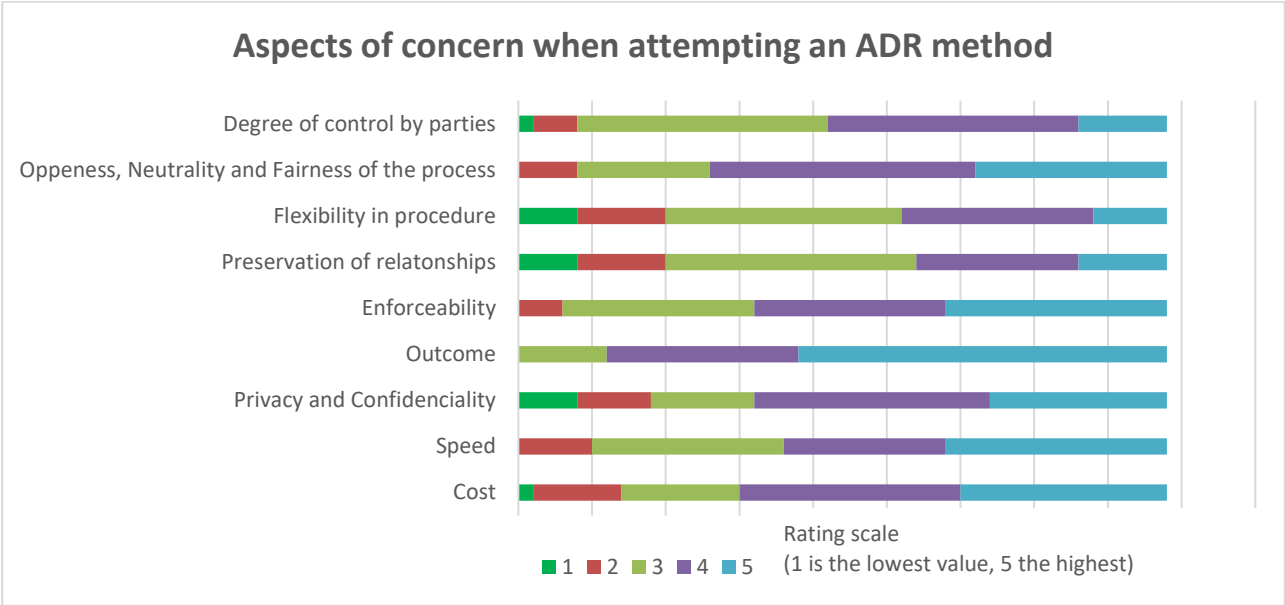


Figure 16. Aspects to consider while utilising an ADR.

Figure 16 shows the rating made by the participants on a 1-5 scale (one was the range of least importance and five the highest range of importance) of nine aspects to consider when utilising an ADR method for construction disputes. The outcome of the dispute was the most popular criterion of concern. In this subject, rating the concerns allows results that indicate the priority on which disputant' decisions are based on.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

The results of the survey reflected the current situation in Ireland regarding the conflicts in the construction sector, the usual ADR methods to solve such conflicts and the concerns behind the involvement of an ADR in the Irish construction sector. The analysis of the results of this section was realised in two parts: By an overview of the condensed data from the survey and by type of ADR method in order to provide an explicit comparison of the most common dispute resolution methods available in the Irish construction industry. Tables of the individual analysis by ADR method can be found in Appendix C: Complementary Results of the Survey.

4.1 OVERVIEW OF THE CURRENT IRISH CONSTRUCTION INDUSTRY

The number of respondents answering the survey was low. The current health emergency situation derived from the Covid-19 pandemic has forced the Irish government, in order to halt the spread of the virus, to impose several lockdowns affecting many businesses particularly the construction sector in which all non-essential works were temporarily suspended while just a strictly limited number of essential sites remained open (O'Riordan & Horgan-Jones, 2021). Additionally, as stated by Alvarez-Fadon (2017), the construction industry is well known as traditionally, uncooperative and lacks innovation due to the controversy of changing and adopting technologies.

In particular, the Irish construction sector is compounded of a broad amount of micro and small companies, so that, it's difficult to access accurate and complete data. For example, in a study of economic analysis of productivity in the Irish construction sector undertaken by KPMG, there was a highlight of the challenge to obtain strong statistics as the data showed couldn't reveal all the

obstacles companies struggle with (KPMG et al. 2019, p. 15). This follows the fact that there are 34,000 Irish family businesses in the Building and Construction sector (O’Gorman & Farrelly, 2020), whose interest is to maintain a reputation, especially in small societies like Ireland.

From the 45 respondents, only one participant assured not to have experienced a construction conflict, while the rest have experienced it. Thereby, from the statistics of 44 respondents left, it was appointed the disputes regarding contractual documentation as the most popular cause of conflict in the Irish construction sector while unethical practices were the last. Contractors and clients were the primary parties involved in most disputes and subcontractors were the least. Notwithstanding, most Irish projects facing conflict are approximately valued at less than €10,000,000 as project size.

Negotiation represented the preferred option for dispute resolution in the Irish construction sector. The number of survey respondents choosing negotiation for their conflict resolution was 20 out of 44, while 12 were by conciliation, 5 by adjudication, 5 by arbitration and 1 by litigation. Notwithstanding, although it’s unknown what type of contract the litigation case was subject to, an external person of the project (neighbour living near the construction site) resolved the operational issues through this method. Moreover, another litigation case is currently proceeding since negotiations didn’t resolved the conflict.

In regards to the average duration of the ADR was between 0-6 months by 57% as the highest rate of the total cases. Thereby, the timing to resolve a dispute by 25 participants was between 0-6 months, 11 spent 6-12 months, 6 participants between 1-2 years and only 2 participants stated to spent more than 2 years.

Furthermore, the direct costs rounded over €10,000 in most of the conflict resolutions by 36% of the cases. Nonetheless, the direct costs of the ADR implicated no money by 7 respondents, under €2,000 by 2 people, under €5,000 by 8 respondents, under €10,000 by 6 people and 16 participants who spent more than €10,000, although the highest expenses record was €250,000 of 1 case by arbitration. Despite the ADR promises to be an inexpensive option to access justice, Islam (2014)

stated that this may vary if the process becomes lengthy and according to the complexity of the conflict.

Additionally, most of the ADR methods completely resolved the construction conflicts by a rate of 86%. Therefore, 28 out of 44 participants resolved their conflicts through an ADR method, 2 didn't, and 3 encountered partially resolved claims where parties have not agreed on all issues in discussion but some.

On the other hand, most of the relationships remained intact or showed improvement, both generated a sum of 59% overall incidence. Moreover, 18 participants found their post-relationships negatively impacted, 15 indicated neither improvement nor disimproved, while 11 participants out of 44 found improvement in their relationships after the process of ADR. Hussein & Al-Mamary (2019) indicated that conflict push parties for creative ideas for an effective resolution, while an ADR may facilitate communication and mutual understanding of the concerns and interests causing better coordination between workers and management.

Regarding the satisfaction of the ADR procedures, there was a global rate of satisfaction of 70%. Accordingly, 31 participants were satisfied with the ADR outcome, 2 were indifferent and 11 participants felt dissatisfaction. Islam (2014) stated that this discontent can be related to the lengthy procedure, no ruling in legal rights and entitlements, low compensation amounts, excessive costs of the procedure or third parties inexperienced, etc.

Moreover, the principal gains utilising an ADR in construction disputes in Ireland were money savings and the remanence of relationships. Thereby, 19 people stated to have saved money, 19 indicated to preserve the business relationships, 18 faced strained relationships, 13 had time savings, 9 were implicated to reputational considerations and 6 obtained only the resolution of the conflict.

On the other hand, the analysis data of the perceived concerns when attempting an ADR method were made by the calculation of the Relative Importance Index (RII), which resulted in a

ranking displayed on Table 7:

Table 7. Ranking of the concerns when utilising an ADR method.

ASPECTS OF CONCERN OF THE ADR METHODS	TOTAL SCORE	RII	RANK
Outcome	195	0.886	1
Enforceability	172	0.781	2
Openness, Neutrality and Fairness of the process	172	0.781	2
Speed	168	0.763	4
Cost	167	0.759	5
Privacy and Confidentiality	159	0.722	6
Degree of control by parties	156	0.709	7
Preservation of relationships	141	0.640	8
Flexibility in procedure	141	0.640	8

From the 9 criteria, the dispute outcome was selected as the most critical aspect when attempting an ADR method, the second place was taken by enforceability and openness, neutrality and fairness of the process. Speed was the third most important factor, then costs in 4th place, followed by privacy and confidentiality as the 5th place of importance and degree of control by parties as to the 6th. Consequently, the preservation of relationships and flexibility in the procedure represented the least important aspects for the Irish construction industry.

4.2 NEGOTIATION

Out of 44 respondents from the survey, 20 participants chose negotiation as a method to their dispute resolution representing a 46% rate. Disputes regarding contractual issues and project cost overrun represented the most prevailing type of conflicts treated by negotiations. 15 out of 20 negotiations had size projects valued at less than €10,000,000, while the same number had ADR durations between 0-6 months. The highest incidence of negotiations, 7 out of 20, spent none when managing their conflict through negotiations and only 1 involved direct expenses over €10,000. From

the 20 negotiations, 14 were resolved which represent 70% of effectiveness, notwithstanding, 3 were unresolved and 3 cases had been partially resolved in which one respondent assured the dispute has proceeded to litigation after more than 2 years of negotiations.

Although 8 out of 20 negotiations perceived a negative impact in the relationships, 12 respondents felt contented with the negotiation outcome which represented a 60% of satisfaction, Nonetheless, only 1 participant felt indifferent to the negotiation outcome, despite an agreement was reached as the respondent stated that the dispute was dealt with and moved on. Conclusively, the remanence of relationships after negotiations represented the main gain after utilising this method stated by 50% of the respondents.

4.3 MEDIATION

The survey resulted in only one participant out of 44 who implemented mediation to solve a construction dispute, which represented 1.5% of the total cases. The project size in dispute was valued at less than €10,000,000, thereby the mediation assisted six types of construction conflicts of a multiparty process where the client, consultant, contractors and subcontractors were involved. The time to resolution was between 0-6 months, and the direct costs were circa €40,000, and although the respondent gained negative reputational considerations, stated that the time and money were saved by this process. Following the work of the RICS (2012), the mediation is a method that can be executed despite it is not provided in the construction contracts, nevertheless, the fact that mediation was not relatively popular in this research concerning construction disputes is due to the majority of the building standard form of contracts don't appoint mediation to resolve such disputes, but conciliation.

4.4 CONCILIATION

Conciliation was the second method most popular to conflict resolution after negotiation. Conciliations were undertaken by 12 respondents out of 44 which represented a 27% rate. Disputes regarding contractual issues and delays in agreed deadlines and completion were the most common disputes treated by this method while contractors and clients were the main parties involved in such disputes. Besides, these methods were performed primarily in projects valued at less than €10,000,000, and only 1 case was over €45,000,000 as size project. The timing to resolve construction disputes was significant varied: 5 respondents asserted to spend 0-6 months, while the longest duration endured 1-2 years by 3 participants. On the other hand, 66% of the conciliations involved direct costs over €10,000, in which 2 people specified to have spent €20,000, 1 person invested €50,000 and 3 respondents said to have spent more than €100,000 to achieve a resolution. This process was 100% effective since all participants had their conflict fully resolved and most cases presented improvement or not damage in their business relationships by a rate of 66%. The satisfaction of this method was 66%, while dissatisfaction represented 25%, the rest remained indifferent to the outcome. Most respondents have declared to gain the remanence of the relationships, followed by money and time savings.

4.5 ADJUDICATION

The adjudication method was used by 5 participants out of 44, which represented an overall 12% rate of incidence. Payment delays were the type of disputes most treated by this method in which the contractors were chiefly the parties involved. The duration of dispute resolution endured 0-6 months by 2 respondents and 6-12 months by 3 respondents, so that, no one spent more than a year

to achieve a resolution. Notwithstanding, 80% of the adjudications employed direct costs over €10,000 of which 3 respondents specified to have spent around €20,000. Furthermore, adjudications had a 100% of effectiveness with all disputes completely resolved, although 60% of the respondents had relationships negatively impacted after this method and 40% experienced no impact. Moreover, this process presented 100% of satisfaction by the respondents, besides, money savings and strained relationships were the main gain obtained through this mechanism.

4.6 ARBITRATION

Similar to adjudication, arbitration presented a general incidence of 12% (5 out of 44 respondents). Most of these disputes concerned contractual matters and project cost overrun in which no disputes involved subcontractors. The construction size of 4 out of 5 responses were around €10,000,000 - €25,000,000 while the length to dispute resolution was of 1-2 years by 60% of the respondents, 20% took 0-6 months and 20% more than 2 years. Regarding the direct costs, 1 participant pointed to have spent under €5,000, 2 didn't know the expenses invested and 2 more invested more than €10,000; from that data, one participant collaborated stating to have spent €250,000 during an arbitration that endured 1 to 2 years to resolve a dispute of a project size valued at more than €45,000,000. On the other hand, arbitration presented 100% of the cases effectively resolved although 60% of the cases experienced a negative impact in their relationships and the rest remained with no changes in their relationships after the process. Additionally, arbitration presented 80% satisfaction and 20% of dissatisfaction whereas the main perceived gains of this method were reputational considerations and strained business relationships.

CHAPTER 5: DISCUSSION

5.1 INTRODUCTION

Practically every construction project involves many professionals with unique expertise who are temporarily working for a project under a limited timeframe and where usually uncertainties may arise due to the complexity of the construction works, external factors and undergoing changes of design that frequently assure risks and if not managed, may turn into disputes (Maru, 2019). Notwithstanding, Cunninghamman (2013) has claimed construction companies are aware to maintain a self-image, not only not to lose clients but to attract future investors. Thereby, since Irish construction companies are commonly family-running business and considering that Ireland is a small community, the lack of cooperation to participate in a survey related to conflicts may be associated with the fact that companies feel their reputation and competitiveness are at risk, as well as the fact that confidentiality and privacy are aspects of the ADR which could also have limited the research scrutiny.

5.2 COMMON CAUSES OF CONSTRUCTION CONFLICTS

Disputes regarding contractual documentation represented the principal type of cause of conflict of the Irish construction works according to the survey results by a 63% respondent's incidence. Notwithstanding, Cunninghamman (2013, p.1) has stated that since construction activities are complex, construction contracts are too, due to the construction risks and the responsibility and obligations behind them. A study developed by She (2011) in Melbourne, Australia, involved 21 construction companies where 72% of the respondents resulted in one to three disputes related to

contractual disputes encountered during 5 years. This indicates an elevated incidence concerning contractual issues, however, the understanding and the adherence to the contract clauses are substantial facts that exert the influence to may or may not emerge a dispute.

Furthermore, project cost overrun represented the second cause of conflict in construction projects in Ireland by a 50% occurrence according to respondents. Cost-overruns can be associated as a result of various disputes, that is, the project is not finished as expected according to previous agreements. In the research of Cunningham (2017, p.1) is expressed that construction activities are risky venture; 50% over budget, 40% are late and 30% fail to cover project expectations. On the other hand, unethical practices were the least cause of conflict concerning only a 4.5% total rate of incidence. According to Netscher (2017), ethical practices are an important part of a company's image and reputation. This establishes a relation to the fact that in small communities like Ireland, the construction companies want to ensure future works and profits by avoiding unethical behaviour.

Contractors and clients were the principal parties involved in disputes in the construction industry. From 44 responses, there was an occurrence of 41 cases involving the contractor in a dispute, whereas 33 cases related to a client, 25 appointed to consultant representative, 15 to subcontractors and only 1 to an external (neighbour). The results of contractual disputes have relation to the fact that many clients were also the main parties involved in Irish disputes since the choice of contract conditions is the responsibility of the client, the same for the significant number of contractors involved in disputes which duties are to supply the necessary to accomplish the project, despite the ongoing uncertainties of the construction activities. Nevertheless, according to Rauzana (2016, p. 44), the contractors and owners are frequently involved in a construction dispute where the principal conflicts arise due to unclear contracts. In conclusion, the whole team is generally affected regardless of who and how many are implicated in a dispute since construction activities are performed by an ensemble team of connecting activities which at the end can affect the success of a construction project.

On the other hand, 61% of the disputes arose in projects valued at less than €10,000,000, however, although massive amounts of money are at stake, there is not an apparent pattern that the use of a specific ADR method is utilised according to the size of the construction project. Consequently, the survey results showed that regardless of the formality of the process, simple negotiations were made of a project size of over €45,000,000 as well as arbitrations were performed of projects valued at less than €10,000,000.

5.3 ADR METHODS TO CONSTRUCTION DISPUTES

Negotiation represented the most commonly used type of ADR method for Irish construction disputes representing 46% of the overall rate. Notwithstanding, negotiations are habitually the first level of dispute resolution as a problem-solving discussion before considering other ADR and are known as the least expensive ADR method and could be the most immediately productive. According to Marion et al. (2019), parties in a negotiation maintain the control and tend to decide a convenient agreement for all parties that don't affect the constructability and relationships. Additionally, negotiations can be settled by emails, telephone or face to face and rarely involve discovery which means money savings.

On the other hand, mediation was the least common ADR to resolve construction conflicts since only 1 case was related to this process which represents 1.5% of the total amount of response. LexisNexis (2021) claimed that mediations are not remarkably popular used in construction disputes due to the lack of awareness of its benefits; however, it will probably turn more popular since its cheaper than other formal procedures. Notwithstanding, one of the primary disadvantages of mediation is the absence of formal rules which can hinder the disagreeing parties from settling, especially if the dispute concerns entrenched positions of technical matters, so that, a recommendation of a third party may better assist a resolution which at the end will be final and binding unless any

party disagree.

In consequence, conciliations were the second method most popular by the Irish construction sector with a 27% of incidence, notwithstanding, according to CI Arb (2021), the conciliation method is not frequently used in Ireland except for disputes related to construction matters in which sensitive issues are hardly ever involved as compared to mediation. Additionally, the fact of the incidence represents a relation by the standard construction contracts as conciliations are typically the second method to be attempted after negotiations, and, unlike mediations, in the conciliation process, there is the advantage that a third party is able to introduce information, resources and other actions that allow disputants to explore other perspectives.

On the other hand, adjudication and arbitration had the lowest prevalence, both reflected a 12% each, this may be related to the formality of the procedures or the need to draw upon them because of a failed attempt to resolve their disputes following the stated steps of the dispute clauses under the construction contract. The adjudication method treated most of the payment delays; this makes sense since the Construction Contracts 2013 appoints adjudication as an ADR to treat any conflict concerning payments that occurred under the construction contract. On the other hand, arbitration is habitually the last method to attempt a resolution under building contracts. Cunningham (2015, p.20) claims that arbitrations provide a backup where a conflict fail to be resolved. Notwithstanding, the only remarkable difference between both methods, according to the survey answers, was about the perceived gains; adjudication resulted mainly in monetary savings while arbitrations results were reputational considerations and strained business relationships.

Finally, one construction dispute was resolved through litigation which means a 1.5% overall rate. Notwithstanding, Cunningham (2015, p. 17) has stated that although is rarely the use of litigation for construction disputes since at least two ADR methods are provided in the standard forms of contract, the courts have jurisdiction to serve a dispute of any nature even in modest claims valued around €2,000 and in the absence of any other procedure.

5.4 EFFICIENCY OF THE ADR METHODS

The efficiency of a process is regularly measured by the amount of useful output produced by costs consumed. However, according to ADRAC (2019) and White (2010) measuring the efficiency of the ADR methods mainly concern the speed, costs, effectiveness, satisfaction, relationships impact and viability to resolve a dispute. Thereby, measuring the efficiency of the ADR methods provides information to ensure if the procedures are viable to obtain justice and resolve disputes.

5.4.1 DURATION

The general timing to resolve a dispute by the ADR was: 0-6 months by 57% of the respondents, 6-12 months by 25%, 1-2 years by 14% and more than two years by 4%. Most of the negotiations and conciliations were resolved in periods of 0-6 months, and the same occurred with the single cases of mediation and litigation as per survey responses. However, most adjudications (60% of the cases) in these research findings implicated durations of 6-12 months, notwithstanding, according to Amy & Michael (2020) in their study realised in Ireland from July 2019 to July 2020 has shown that most construction adjudications were completed in periods of 28 to 42 days, thereby, the results of this research contradict this statement since most of the adjudications in this research took about 180 days to obtain a resolution.

On the other side, arbitrations had a resolution rate of periods around 1-2 years by 60% of the cases. Notwithstanding, according to the literature, one of the advantages of ADR is the fact that these methods are normally faster than litigation (Cunninghman 2015, p. 24). However, this research found one case proceeded to court which resolution took 0-6 months to secure a resolution. Additionally, the same author stated that most negotiations are a matter of days, but the research findings detected negotiations that invested more than 2 years. Hence, although the complexity of the

problem and the willingness to cooperate to resolution are factors that impact the lasting of an ADR, the investment of time is virtually assured if an ADR doesn't lead to a full resolution of the issues.

5.4.2 DIRECT COSTS

The costs to resolve construction conflicts are typically high (Cunningham, 2015), notwithstanding, the direct, indirect and hidden costs implicated in the construction disputes can represent a considerable portion of the award/settlement amount or even the initial claim amount (Gibson & Gebken, 2005). The survey reflected the highest percentage of 36% concerning direct costs over €10,000 implicated by the use of an ADR, followed by an 18% of costs under €5,000, then 16% occurrence of cases that didn't invest any amount of money. Despite there isn't wide information regarding a quantitative comparison of the costs implied by utilizing the different ADR, the present study has found that in construction disputes most negotiations invested no money to their resolution but the rest of the ADR methods of this study implicated in its majority direct costs over €10,000. Furthermore, the average costs of conciliations according to the respondents who specified their answers were around €65,000 and adjudications average around €20,000. Notwithstanding, a study in Ireland carried by Amy & Michael (2020) have shown that the fees in construction adjudications of the adjudicator were around €35,000 - €39,999, thereby, according to the survey results, the adjudication fees are not far from the literature statements. In the case of arbitrations, only one respondent elaborated stating to have spent €250,000 which represented the highest global value concerning direct costs in the research. Besides, the unique case of mediation invested circa €40,000 to its resolution and the case of litigation represented expenses under €5,000.

On the other hand, 11% of the total respondents ignored the direct costs employed to dispute resolution, this can often happen when the conflict is not traced or because the level of seriousness and escalation was unexpected. However, knowing the direct costs allows knowing the viability of

the ADR procedures to get a conflict resolution, in other words, the estimation of the amount invested in the ADR method vs the total cost of the project which results in the final profitability. For instance, in the case which arbitration costs were around €250,000 and the project size valued around €45,000,000, the dispute resolution investment equals 0.5% of the total value of the project, however, this only covers the fees paid to claim consultant, lawyers, etc., but dismisses the indirect or hidden costs related to the dispute. Overall, every dispute and the costs implicated strongly depends on the complexity of the conflict, the duration of resolution and the standing of the third party.

5.4.3 EFFECTIVENESS

The survey findings demonstrated a general success of the ADR methods of 86% to obtain a resolution in construction disputes, while 7% related to disputes partially resolved, 5% unresolved and 2% incidence resulted in proceeding to court. However, negotiation methods were the only ADR that didn't present a 100% effectiveness resulting in partially, not resolved or even disputes outcomes proceeding to court. This result calls into question the revision of the literature, as Yates (2011, p.94) indicated that negotiations in construction conflict are usually successful with a percentage of 90 to 95% of settlements in comparison to litigation. Notwithstanding, despite partially resolved settlements may put the relationships at risk since some issues are still at variance and have been delayed for the future provoking ongoing discussions and critical points to arrange an absolute agreement, Engel & Korf (2005, p. 139) claimed that a partial settlement that is practical can be better than a concluded agreement which is unfeasible and never implemented.

On the other hand, Shonk (2021) stated that failed negotiations can be associated with negotiation styles, lack of preparation turning out the BATNA (Best Alternative to a Negotiated Agreement) or walking away from a good deal, weak deals, rapid decisions, entrenched positions, fear to risk, lack of creativity or resistance to yielding, etc. Conversely, the effectiveness of

conciliation, mediation, adjudication and arbitration resulted in 100% by having all issues in dispute fully resolved, so that, dispute escalation or litigation could be avoided. This fact matches the literature, in particular the conciliation results, since according to Cunningham (2015, p. 93), conciliations processes have presented statistics of 95% of success in Irish construction disputes. Consequently, the survey responses reflected that more structured ADR methods are successful to produce resolutions, so that, this can be related to the introduction of the third party who assists the parties to gain a clearer picture of the conflict and balances the power between the parties, besides the approaches are merely centred on the conflict resolution and the parties are somehow engaged to the certain formality of the procedures, unlike negotiation which method is completely under the control of the parties. Additionally, ADRAC (2019) has claimed that the effectiveness of the ADR has relation mainly to the position of the disputants, type of disputes, and the skills of the third party.

5.4.4 RELATIONSHIP IMPACT

Preserving a robust relationship during the construction activities makes the team members work efficiently, besides, may provide opportunities to continue working on future business (Kessler, 2017). Although one of the chief advantages of the ADR compared to litigation, is in regards to the remanence of the relationships since ADR nature is about methods less confrontational, this research has noted a general result of 41% rate whose relationship was negatively impacted while 34% resulted in non-affected relationships and 25 % experienced an improvement in their relationships. Even so, negotiations reported a total sum of 60% between relationships improved or non-affected while the 40% left experienced a negative impact. In conciliations, 66% was the sum result of an improvement or non-affected relationships, whereas adjudication and arbitration were the methods presenting the same frequency of 60% concerning damaged relationships. Moreover, in regards to the single cases of mediation and litigation, participants stated to both experience improvement in their relationships.

Thereby, when agreements are reached and satisfy the interests of the parties, disputants are able to maintain a healthy business relationship as the result of effective communication and cooperation to settle a dispute which ultimately enhances the understanding and may avoid future conflicts. On the other hand, Gibson & Gebken (2005) have declared that in most cases the dispute involves the final account and this frequently means no further business relationships between the parties. Additionally, Tolson (2017) indicated that indeed minor conflicts may damage the reputation of a business and implicate considerable amounts of time management, energy and money which represent facts that accentuate a negative impact on the post-relationships.

5.4.5 SATISFACTION

The fulfilment of needs and expectations derived from an ADR method depends on the angle which is seen, that is, if in a dispute there is a winner and a loser, both will have a distinct perception concerning the process and the outcome. Although Cunninghamman (2015, p. 3) stated that disputes usually result in unsatisfactory outcomes due to the time and money investment by the parties, this research allowed finding an overall 70% (31 out of 44 respondents) of occurrence feeling satisfaction regarding the use of ADR, 25% resulted dissatisfied and 5% of respondents were indifferent to the ADR outcome. The cases of adjudication and the unique cases of mediation and litigation had a 100% of satisfaction, however, in regards to negotiations, there was a 35% dissatisfaction followed by conciliations with a dissatisfaction rate of 25% and arbitration as a last with a 20% prevalence.

Notwithstanding, despite there are factors that contribute to the satisfaction of an ADR such as duration, third party performance, post-relationships among many others, Cohen & Cohen (2002) have affirmed that parties in dispute feel more satisfied when they maintain prominent control over the process and so, the outcome. Notwithstanding, in this research, negotiations presented the highest rate of dissatisfaction despite is the method that allows the most control, so that, the fact that parties

possess latitude may also represent a downside because one of the parties may feel victimized at some stage and agreements can be produces which later on are regretted. Conversely, a competent third party can standardise the process providing order, objective criteria and limits to the process where parties can feel at the same level. On the other hand, the indifferent posture facing an outcome may occur when parties have no option but to follow the contract, negotiate, compromise to closure a matter, go back to normality and avoid further and formal procedures.

5.4.6 OVERALL GAINS

The gains concern the perceived positive or negative effects after utilising the ADR method in construction disputes, in this way, an illustration of the strengths and weakness of the ADR methods is provided which could question a future change in the procedures. The research responses appointed money savings and the remanence of relationships as the highest global gain (each selected by 19 respondents out of 44), followed by strained business relationships by 18 respondents, time savings by 13 respondents, reputational considerations by 9, and 6 people assured to merely have the conflict resolution. Furthermore, the principal gain of negotiation and conciliation methods was the remanence of relationships by 50% and 66% respectively, however, negotiations reported a second gain concerning money savings and strained relationships, while conciliations had subsequent gains such as time and money savings. Adjudication cases mainly got money savings and strained relationships by 60% of the cases, whereas arbitrations only obtained negative gains: strained business relationships by 60% rate, followed by reputational considerations with a 40% incidence. Despite the advantages of the ADR are well-documented, the survey responses indicated a meaningful number of strained post-relationships. Notwithstanding, when a conflict is formally expressed, it may conduct to further antagonistic and entrenched positions, conflict intensification, etc., however, such implications cannot exclusively be related to the use of an ADR, but to the fact

that parties have already faced disagreements before attempting an ADR method, so that, party relationships may remain bitter after the dispute resolution processes. As stated by Nosé, et al. (2015), conflict causes discomfort that often disrupts communication among the parties, it also origins stress, demands energy and time, so that, shattered relationships may impact business outcomes such as performance, satisfaction, and profit.

5.5 PERCEIVED CONCERNS WHEN ATTEMPTING AN ADR METHOD

The ADR attributes have been rated when attempting a conflict resolution. The calculations derived from the Relative Importance Index showed that the overall ranking results of the Irish construction industry have the concern of the next aspects: (1st) Outcome of the dispute, (2nd) Enforceability and -openness, neutrality and fairness of the process-, (both with the same score), (3rd) Speed of the process, (4th) Costs, (5th) Privacy and confidentially, (6th) Degree of control by parties, (7th) Preservation of relationships and flexibility in the procedure (both having the same score). In general, the survey data indicated respondents are less concerned with how relationships end as well as the flexibility in procedure but focus on the results of the outcome. Thereby, the outcome typically concerns the end of the conflict that could result, depending on the parties' perspective, of the fulfilment of the needs of one party, some, all or even no party. Additionally, although the end of the conflict may largely stop expenses and time investment, the failure to secure a settlement through an ADR method may lead to more formal procedures or litigation. On the other hand, flexibility in the ADR procedures, as being the last ranked in importance, shows that Irish construction disputants are less concerned to customise the resolution process. Furthermore, although Irish construction companies are mostly family-run business, the survey results demonstrated the preservation of relationships is also of the least concerns of such industry.

CONCLUSION

The construction industry is a business where extensive amounts of money are managed and since conflicts are unbudgeted, a good practice would be the avoidance of disputes. Nonetheless, the reality is that the uncertainties that typically occur on-site of a construction work produce situations where conflicts are virtually assured, thereby, it's difficult but not impossible to minimise the conflict effects by accurate management. This study has successfully examined the causes of conflicts in constructions, the current ADR methods and their features concerning Irish construction disputes, as well as the principal concerns of the disputant parties when utilizing an ADR method. The study also outlines how risk in construction can be turned into a dispute and how its escalation may involve stress, costs, broken relationships, time investment, adverse publicity and eventually the loss of business. The particular focus of the study was on the most popular ADR stated in the main standard forms of building contract in Ireland as negotiation, mediation, conciliation, adjudication and arbitration.

Disputes regarding contractual documentation represented the most typical cause of conflict by 63% of the cases in the Irish industry, whereas the last cause was about unethical practices with a 4% total of the cases. This last fact reflects the Irish construction industries are concerned to maintain their image and reputation by working on an ethical basis that often ensures the company's profits. Additionally, contractors and clients were the primary parties in disputes by 93% and 75% respectively of the general cases. This data have a relationship since the client appoints the contractor as the person directly in charge to accomplish the construction works under the terms and documents of the contract selected by the client. Moreover, a global rate of 61% of the current construction projects experiencing disputes are sized in less than €10,000,000, however, this research found the

size of the construction projects has no relation to the use of a specific ADR method regardless of its formality. On the other hand, the main concerns of the Irish construction industry when attempting an ADR is in regards to the dispute outcome ranked as the most significant fact which typically involves a final monetary account while the least concern was in regards to the preservation of relationships and the flexibility in procedure.

Negotiations resulted in the most popular method to resolve construction disputes by an overall 46% of the cases since they represent the first method to attempt to disputes a resolution under the terms of most of the Irish standard building contract. Moreover, it was the swiftest method resulting in 75% of cases resolved in periods of 0-6 months and also resulted to obtain the highest rate of 30% of the cases with relationships improved after conflict. On the other hand, the negotiation was the unique method that had dispute outcomes of partially resolved, not resolved or in proceeding to court by a combined sum of 30% of the cases and presented the highest dissatisfaction of a global concurrence of 35% of the cases.

Mediation was the least used method by 1.5% total incidence, despite this process can be attempted in construction disputes even if it's not provided in the contracts. Hence, the study indicates that construction companies rather sticking to the standard contract clauses where conciliation is habitually the second step to attempt a resolution after negotiation processes. Notwithstanding, the unique mediation case observed in this research showed 100% of effectiveness.

Conciliation was the second most used method for construction disputes in Ireland by 27% of the participants after negotiations. Furthermore, all cases were resolved through this method resulting in 100% effectiveness, and 41% of the cases resulted in relationships non-affected, that is, that they didn't improve nor disimproved. Besides, conciliation was the method with the highest incidence of perceived gains in relation to money-saving and remanence of relationships by 41% and 66% respectively.

Adjudications, similar to arbitration, had a global incidence rate of 12% of popularity for construction disputes. The adjudication process was the method having the highest number of dispute resolutions involving direct costs over €10,000 by a frequency of 80% of the cases involving this amount. Additionally, adjudication was the method in which 100% of cases resulted satisfactorily and effectively resolved. However, 60% of cases presented relationships negatively impacted.

Arbitration presented 12% of global popularity and was 100% effective having all cases resolved, however, 60% of the cases experienced relationships negatively impacted. Additionally, this method presented the highest percentages concerning reputational considerations by 40% of the cases and strained relationships by 60% as overall gains after the dispute resolution.

Consequently, formal and quasi-formal ADR methods resulted in 100% effectiveness to resolve construction disputes. Notwithstanding, although every construction conflict is different, the complexity of the problem, the willingness of parties to cooperate to resolution and the standing of the third party are factors that impact the lasting and costs of an ADR method. On the other hand, a strategy of conflict resolution in construction projects is by prompt response to the problems, clear communication among the team members, the creation of a good work operation, supervision and management.

The results of this study provide relevant information for avoiding and/or managing a resolution of conflicts in construction projects. Further studies can be realised with respect to risks in construction, work organisation and teaming.

REFLECTION

This study has effectively accomplished the targeted objectives, however, the challenges encountered while its realisation were the data collection of the surveys due to the temporary closure of the construction activities because of the current pandemic and the perceived conservative approach of the Irish construction companies as reflected by the number of survey responses.

As a personal observation, despite the theory constantly points out the advantages of the ADR in regards to the time and money matters in comparison to litigation, my question always was How much is cheap? How quick they are? As a learner, I found it surprising to see the real amounts invested in disputes, for instance, the case of the arbitration fees which were around €250'000 or the negotiation case which invested more than 2 years and at the end finished in a litigation outcome.

Additionally, in regards to the ADR and their opportunity areas, I believe it would be recommended that government organizations promote awareness and information concerning the ADR methods and their effectiveness as well as the requirement of updating certifications of the third parties to enhance part of the efficiency of the ADR procedures.

On the other hand, since construction conflicts are virtually assured in various manners for every project, further studies can be made about this subject but supported or in collaboration with an organization or governmental authority, thereby, potential users may trustily participate and a broad range of answers could lead to more complete statistics that can assist in the prevention or better management of the construction conflicts.

Conclusively, with the development of this study, I could acquire new experience in relation to the master's degree but overall, the opportunity to apport different perspectives in this matter that can be helpful for future works.

BIBLIOGRAPHY

- Adnan, H. et al., 2012. Ethical Issues in the Construction Industry: Contractor's Perspective. *Procedia - Social and Behavioural Sciences*, Volume XXXV, pp. 719-727.
- Al-Saadi, H., 2014. *Demystifying Ontology and Epistemology in research methods*. England: University of Sheffield.
- Alvarez-Fadon, T., 2017. ICE Institution of Civil Engineers. [Online] Available at: <https://www.ice.org.uk/news-and-insight/the-civil-engineer/september-2017/construction-sector-too-traditional-lacks-innovate> [Accessed 25 April 2021].
- Amy, B. & Michael, K., 2020. LK Shields Your Legal Counsel. [Online] Available at: <https://www.lkshields.ie/news-insights/publication/construction-adjudications-in-ireland-the-latest-trends> [Accessed 11 May 2021].
- Babu, B. S., 2019. *A Study of Risk Management Practices in Irish Construction Industry: Current Scenario, Challenges and Strategies for Risk Management*. Dublin: Dublin Business School.
- Benarroche, A., 2019. *Construction Contract Documents. A Guide to Common Contract Parts*. [Online] Available at: <https://www.levelset.com/blog/construction-contract-documents-guide/> [Accessed 13 April 2021].
- Bryson, S., 2015. Mason Hayes & Curran. [Online] Available at: <https://www.mhc.ie/latest/insights/changes-to-the-building-control-amendment-regulations-2014> [Accessed 18 May 2021].

Building Control Regulations, 1997. Law Reform Commission/Coimisiún Um Athchóiriú An Dlí.

[Online] Available at: <https://revisedacts.lawreform.ie/eli/1997/act/496/section/1/revised/en/html>

[Accessed 18 May 2021].

Burney, S. M. A. & Saleem, H., 2008. Monograph on inductive & deductive research approach.

Karachi: Lecture delivered on 06-03-2008 at Auditorium of Faculty of Arts and Science, University of Karachi.

Chartered Institute of Arbitrators, 2021. Chartered Institute of Arbitrators. [Online] Available at:

<https://www.ciarb.org/> [Accessed 6 April 2021].

CIRI, 2021. Construction Industry Register Ireland. [Online] Available at:

<https://www.ciri.ie/complaints/dispute-resolution-in-construction-contracts/> [Accessed 20 April 2021].

Cohen, C. F. & Cohen, M. E., 2002. Relative Satisfaction with ADR: Some empirical evidence.

Dispute Resolution Journal, LVII (4), pp. 37-41.

Construction Contracts Act, 2013. Irish Statute Book. [Online] Available at:

<http://www.irishstatutebook.ie/eli/2013/act/34/section/1/enacted/en/html> [Accessed 12 March 2021].

CRANApplus, 2011. Crana plus. [Online] Available at:

https://crana.org.au/uploads/pdfs/Other_45.pdf [Accessed 01 03 2021].

C.I.F., 2021. Construction Industry Federation. [Online] Available at: <https://cif.ie/> [Accessed 9 April

2021].

Cummins, H., 2016. Philiplee. [Online] Available at: [https://www.philiplee.ie/the-construction-](https://www.philiplee.ie/the-construction-contracts-act-2013/)

[contracts-act-2013/](https://www.philiplee.ie/the-construction-contracts-act-2013/) [Accessed 15 March 2021].

- Cunningham, T., 2017. What Causes Cost Overruns on Building Projects? An Overview, Dublin: Technological University Dublin.
- Cunningham, T., 2018. The RIAI Standard Form of Contract 2017 Version: An Overview, Dublin: Technological University Dublin.
- Cunningham, T., 2013. Choosing an Appropriate Main Contract for Building Work in the Republic of Ireland - an Overview, Dublin: Technological University Dublin.
- Cunningham, T., 2013. The Relevance of the Contract Administrator's Certificates under the Principal Forms of Irish Building Contract, Dublin: Technological University Dublin.
- Cunningham, T., 2015. Dispute Resolution under the Principal Irish Forms of Building Contract. Dublin: School of Surveying and Construction Management Dublin Institute of Technology.
- DeCarlo, M., 2018. Inductive and deductive reasoning. In: License Creative Commons Attribution-NonCommercial-ShareAlike 4.0, ed. Scientific Inquiry in Social Work. Roanoke: Open Social Work Education, pp. 2-487.
- Department of Housing, Local Government and Heritage, 2020. gov.ie. [Online] Available at: <https://www.gov.ie/en/publication/1d2af-building-regulations/> [Accessed 4 April 2021].
- Department for Business, Energy and Industry Strategy, 2018. Resolving Consumer Disputes. Alternatives Dispute Resolution and the Court System Final Report, London: Open Government Licence.
- Designing Buildings, 2021. Designing Buildings. [Online] Available at: <https://www.designingbuildings.co.uk/wiki/Sub-contractor> [Accessed 13 April 2021].
- ECSO, 2020. European Construction Sector Observatory. Late payment in the construction sector: European Commission.

- Engel, A. & Korf, B., 2005. Negotiation and mediation techniques for natural resource management, Rome: Food and Agriculture Organization of the United Nations.
- Engineers Ireland, 2021. Engineers Ireland. [Online] Available at: <https://www.engineersireland.ie/> [Accessed 9 April 2021].
- Fenn, P., Lowe, D. & Speck, C., 1997. Conflict and dispute in construction. *Construction Management and Economics*, 15(6), pp. 513-518.
- Fiadjoe, A., 2004. *Alternative Dispute Resolution: A Developing World Perspective*. First ed. London: Cavendish Publishing Limited.
- Gabriel, D., 2013. Dr Deborah Gabriel. Leader in Race, Education and Social Justice. [Online] Available at: <https://deborahgabriel.com/2013/03/17/inductive-and-deductive-approachestoresearch/#:~:text=Inductive%20approaches%20are%20generally%20associated,many%20have%20a%20deductive%20orientation>. [Accessed 03 May 2021].
- Gibson, G. & Gebken, R. J., 2005. Decision Making, Transactional Costs and Dispute Resolution: Is there a Better Why?. Boston, Sloan Industry Centres Annual Conference.
- Harper, R., 2012. The collection and analysis of job advertisements: a review of research methodology. *Library and Information Research*, XXXVI (112), pp. 29-54.
- Heneghan, J. & Byrne, C., 2016. William Fry. [Online] Available at: <https://www.williamfry.com/newsandinsights/news-article/2016/08/09/construction-contracts-act2013-new-adjudications-code-of-practice-published> [Accessed 19 May 2021].
- Hewitt, A., 2014. *The FIDIC Contracts: Obligations of the Parties*. 1st ed. West Sussex: Wiley Blackwell.

- Hussein, A. F. F. & Al-Mamary, Y. H. S., 2019. Conflicts: Their Types, And Their Negative and Positive Effects on Organizations. *International Journal of Scientific & Technology research*, VIII (08), pp. 10-13.
- ICMA, 2020. Irish Commercial Mediation Association. [Online] Available at: <https://icma.ie/> [Accessed 20 April 2021].
- IET, 2021. The Institution of Engineering and Technology. [Online] Available at: <https://www.theiet.org/> [Accessed 10 April 2021].
- Investment Projects and Programmes Office (IPPO), 2019. Government of Ireland. [Online] Available at: <https://assets.gov.ie/6659/3312cd28edf04f4c83666ac76b534c45.pdf> [Accessed 13 April 2021].
- Islam, M. S., 2014. Efficiency and Effectiveness of Alternative Dispute Resolution Schemes Towards the Promotion of Access to Justice in Bangladesh. *IIUC Studies*, VIII, pp. 95-112.
- Jaffar, N., Tharim, A. H. A. & Shuib, M. N., 2011. Factors of Conflict in Construction Industry: A Literature Review. *Elsevier Procedia Engineering*, pp. 193-202.
- Johnson, J. & LeBreton, J. M., 2004. History and Use of Relative Importance Indices in Organizational Research. *Organizational Research Methods*, VIII (3), pp. 238-257.
- Kessler, L. M., 2017. Lexis Nexis. [Online] Available at: <https://www.lexisnexis.com/lexis-practical-guidance/the-journal/b/pa/posts/using-mediation-to-resolve-construction-.....disputes> [Accessed 21 April 2021].
- Kirschner, S., 2019. Dispute Resolution Clauses in Contract. [Online] Available at: <https://resolveadvisors.com.au/publication/dispute-resolution-clauses-contract/> [Accessed 24 March 2021].

- Koch, C., 2004. Operational Management on the Construction Site - Developing a Human Resource and Knowledge Oriented Alternative to Lean Construction. Edinburgh, Association of Researchers in Construction, pp. 1017-1027.
- KPMG, Future Analytics Consulting & TU Dublin, 2019. Economic analysis of productivity in the Irish construction sector. [Online] Available at: [file:///C:/Users/Ana/Downloads/75034_5ea76039-b46b-434d-9b66-ab2936df38f7%20\(2\).pdf](file:///C:/Users/Ana/Downloads/75034_5ea76039-b46b-434d-9b66-ab2936df38f7%20(2).pdf) [Accessed 25 April 2021].
- Law Society of Ireland., 2018. Law Society. [Online] Available at: <https://www.lawsociety.ie/globalassets/documents/committees/arbitration-and-mediation/adrguide.pdf> [Accessed 22 April 2021].
- LexisNexis, 2021. LexisNexis. [Online] Available at: <https://www.lexisnexis.co.uk/legal/guidance/fidic-contracts-2017-dispute-resolution> [Accessed 11 April 2021].
- Mamata, R. et al., 2016. RII & IMPI: Effective Techniques for Finding Delay in Construction Project. International Research Journal of Engineering and Technology (IRJET), III (1), pp. 1173-1177.
- Marion, S., Hannah, M. & Joe-han, H., 2019. Lexology. [Online] Available at: <https://www.lexology.com/library/detail.aspx?g=1b91063d-2573-4ee0-9d8f-61fb2e98727e> [Accessed 20 April 2021].
- Maru, V., 2019. Can Construction Disputes be settled easily?. PM World Journal, 8(8), pp. 1-24.
- Mashwama, X. N., Aigbavboa, C. & Thwala, D., 2016. Investigation of construction stakeholders' perception on the effects & cost of construction dispute in Swaziland. Elsevier Procedia Engineering, Volume 164, pp. 196-205.

- McCann, S., 2019. ADR ODR International. [Online] Available at: <https://www.adrodrinternational.com/the-impact-of-mediation-in-construction> [Accessed 2021 April 22].
- McMahon, P., 2021. UK Law (An Irish Guide). [Online] Available at: <http://uklegal.ie/jct-contracts/#:~:text=Joint%20Contract%20Tribunal&text=The%20standard%20form%20building.%20contract,and%20embodies%20broadly%20similar%20principles>. [Accessed 9 April 2021].
- Mediation Act, 2017. Irish Statute Book. [Online] Available at: <http://www.irishstatutebook.ie/eli/2017/act/27/enacted/en/print.html> [Accessed 4 April 2021].
- Members of ADRAC, 2019. ADRAC toward accord. [Online] Available at: <https://www.adrac.org.au/copy-of-e-comms> [Accessed 2021 May 11].
- Motsa, Caleb Dumisa, 2006. Managing Construction Disputes. Malaysia: Faculty of Civil Engineering Universiti Teknologi Malaysia.
- Mubarak, Husin, S. & Oktaviati, M., 2017. External Risk Factors Affecting Construction Costs. Banda Aceh, AIP Publishing.
- NEC, 2021. NEC Procure, Manage, Deliver. [Online] Available at: <https://www.neccontract.com/About-NEC> [Accessed 10 April 2021].
- Neto da Silva, M. M. et al., 2017. Analysis of conflicts associated at the construction industry team management: a study case in Pau dos Ferros/RN. Revista Espacios, 38(07), p. 27.
- Netscher, P., 2017. Construction Management: From Project Concept to completion. 1st ed. Subiaco: CreateSpace Independent Publishing Platform, 2017.
- New York Convention, 1958. New York Convention. [Online] Available at: <https://www.newyorkconvention.org/> [Accessed 5 April 2021].

- Nosé, L., Korunka, C., Frank, H. & Danes, S. M., 2015. Decreasing the Effects of Relationship Conflict on Family Businesses: The Moderating Role of Family Climate. *Journal of Family Issues*, XXXVIII (1), pp. 1-27.
- Nys, J., 2018. Risk allocation and dispute resolution in construction contracts: An analysis of the current situation and the impact of blockchain and smart contracts., Tilburg: Tilburg University, Understanding Society.
- O’Gorman, C. & Farrelly, K., 2020. DCU Business School. [Online] Available at: <https://business.dcu.ie/wp-content/uploads/2020/04/NCFB-Family-Business-By-Numbers.pdf> [Accessed 25 April 2021].
- O’Riordan, E. & Horgan-Jones, J., 2021. Covid-19: List of exemptions from construction industry shutdown announced. *The Irish Times*, 6 January.
- Peckar, R. S. & Zicherman, M. S., 2019. *Construction 2020*, London: © Law Business Research Ltd 2019.
- PON Staff, 2021. *Negotiations and Logrolling: Discover Opportunities to Generate Mutual Gains*, Cambridge: Harvard Law School.
- Procurement Office of Government, 2019. *Public Works Contract for Building Works Designed by the Employer*, Dublin: Office of Government Procurement Department of Public Expenditure and Reform.
- Procurement Office of Government, 2021. Oifig um Sholáthar Rialtais. [Online] Available at: [https://ogp.gov.ie/minister-donohoe-launches-review-of-procurement-policy-for-public-worksprojects/#:~:text=Government%20Contracts%20Committee%20for%20Construction%20\(GCCC\),sector%20national%20construction%20procurement%20policy](https://ogp.gov.ie/minister-donohoe-launches-review-of-procurement-policy-for-public-worksprojects/#:~:text=Government%20Contracts%20Committee%20for%20Construction%20(GCCC),sector%20national%20construction%20procurement%20policy). [Accessed 9 April 2021].

- Proksch, S., 2016. Conflict Management. Management for Professionals. 1st ed. Vienna: Springer.
- Rauzana, A., 2016. Causes of Conflicts and Disputes in Construction Projects. IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE), XIII (5), pp. 44-48.
- Razia, B., Thurairajah, N. & Larkham, P. J., 2017. Understanding Delays in Construction in Conflict Zones. Birmingham, Faculty of Engineering and Built Environment, Birmingham City University, pp. 844-852.
- RIAI, 2021. Royal Institute of the Architects of Ireland. [Online] Available at: <https://www.riai.ie/> [Accessed 6 April 2021].
- RICS Professional Guidance, 2012. Conflict avoidance and dispute resolution in construction, Coventry: Royal Institution of Chartered Surveyors (RICS).
- Ross, K., 2017. Making Empowering Choices: How Methodology Matters for Empowering Research Participants. Boston: Forum Qualitative Sozialforschung / Forum: Qualitative.
- Saunders, M., Lewis, P. & Thornhill, A., 2009. Research Methods for Business Students. 5th ed. Edinburgh: Pearson Education Limited.
- Scotland, J., 2012. Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive and Critical Research. English Language Teaching, 5(9), pp. 9-16.
- Shah, R. K. & Alotaibi, M., 2017. A study of unethical practices in the construction industry and potential preventive measures. Journal of Advanced College of Engineering and Management, Volume III, pp. 1-19.

- She, L.-Y., 2011. Factors which impact upon the selection of Dispute Resolution methods for commercial construction in the Melbourne industry: Comparison of the Dispute Review Board with other Alternative Dispute Resolution methods, Melbourne: Proceedings of RICS Construction and Property Conference.
- Shonk, K., 2021. Why Negotiations Fail. Common pitfalls to avoid in business negotiations, Cambridge: Program on Negotiation Harvard Law School.
- Society of Chartered Surveyors Ireland, 2021. Society of Chartered Surveyors Ireland. [Online] Available at: <https://scsi.ie/> [Accessed 6 April 2021].
- STA Law Firm, 2019. Mondaq: Connecting knowledge & people. [Online] Available at: <https://www.mondaq.com/arbitration-dispute-resolution/777618/comparative-analysis-of-adr-methods-with-focus-on-their-advantages-and-disadvantages> [Accessed 19 April 2021].
- Tolson, S., 2017. Alternative Dispute Resolution, Cambridge: Fenwick Elliott The Construction & Energy law specialists.
- White, N., 2010. Alternative Dispute Resolution: Mediation and Conciliation, Dublin: Law Reform Commission.
- Worth, O., 2020. Lexology. [Online] Available at: <https://www.lexology.com/library/detail.aspx?g=8b605592-6593-41b0-a05b-5309b3e6a6b5> [Accessed 21 April 2021].
- Yates, J. K., 2011. The Art of Negotiation in Construction Contract Disputes. Journal of Legal Affairs and Dispute Resolution in Engineering and Construction, III(3), p. 94.

- Younis, G., Wood, G. & Malak, M. A. A., 2008. Minimizing construction disputes: the relationship between risk allocation and behavioural attitudes. Salford, Proceedings from International Conference on Building Education and Research (BEAR).
- Zafeiti, S. M. B. A. & Mohamad, N. A., 2015. Methodological Considerations in Studying Transformational Leadership and its Outcomes. International Journal of Engineering Business Management, VII (10), pp. 1-11.

APPENDIX A: APPLICATION FOR ETHICAL APPROVAL (FORM A)

Form A: Application for Ethical Approval	
Undergraduate/Taught Postgraduate Research	
This form should be submitted to the module leader for the relevant initial proposal and/or the relevant supervisor if the proposal has already been accepted.	
Please save this file as <i>STUDENT NUMBER_AEA_FormA.docx</i>	
Title of Project	A Comparative Study of Negotiation, Adjudication, Arbitration, Conciliation and Mediation as Alternatives in Dispute Resolution and their efficiency in resolving disputes in Construction Industry in Ireland
Name of Learner	Ana Lucía Cortés Dutton
Student Number	51702461
Name of Supervisor/Tutor	Nadia Bhatti

Check the relevant boxes. All questions must be answered before submitting to the relevant lecturer / supervisor. Note: only one box per row should be selected.

Item	Question	Yes	No	NA
1	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	Will you tell participants that their participation is voluntary?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	Will you obtain written consent for participation (through a signed or 'ticked' consent form)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	If the research is observational, will you ask participants for their consent to being observed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Will you tell participants that they may withdraw from the research at any time and for any reason?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6	Will you give participants the option of not answering any question they do not want to answer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Will you ensure that participant data will be treated with full confidentiality and anonymity and, if published, will not be identifiable as any individual or group?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8	Will you debrief participants at the end of their participation (i.e., give them a brief explanation of the study)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9	If your study involves people between 16 and 18 years, will you ensure that passive consent is obtained from parents/guardians, with active consent obtained from both the child and their school/organisation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	If your study involves people less than 16 years, will you ensure that <u>active</u> consent is obtained from parents/guardians <u>and</u> that a parent/guardian or their nominee (such as a teacher) will be present throughout the data collection period?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Item	Question	Yes	No	NA
11	If your study requires evaluation by an ethics committee/board at an external agency, will you wait until you have approval from both the Independent College Dublin and the external ethics committee before starting data collection.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	If you are in a position of authority over your participants (for example, if you are their instructor/tutor/manager/examiner etc.) will you inform participants in writing that their grades and/or evaluation will be in no way affected by their participation (or lack thereof) in your research?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	If you are in a position of authority over your participants (for example, if you are their instructor/tutor/manager/examiner etc.), does your study involve asking participants about their academic or professional achievements, motivations, abilities or philosophies? (please note that this does not apply to QA1 or QA3 forms, or questionnaires limited to market research, that do not require ethical approval from the IREC)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Will your project involve deliberately misleading participants in any way?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
15	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
16	Does your project involve work with animals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
17	Do you plan to give individual feedback to participants regarding their scores on any task or scale?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does your study examine any sensitive topics (such as, but not limited to, religion, sexuality, alcohol, crime, drugs, mental health, physical health, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
19	Is your study designed to change the mental state of participants in any negative way (such as inducing aggression, frustration, etc?)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
20	Does your study involve an external agency (e.g. for recruitment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
21	Do your participants fall into any of the following special groups?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	<i>(except where one or more individuals with such characteristics may naturally occur within a general population, such as a sample of students)</i>			

If you have ticked any of the shaded boxes above, you should consult with your module leader / supervisor immediately. **You will need to fill in Form B Ethical Approval** and submit it to the Research & Ethics Committee **instead** of this form.

There is an obligation on the researcher to bring to the attention of the Research & Ethics Committee any issues with ethical implications not clearly covered by the above checklist.

I consider that this project has no significant ethical implications to be brought before the relevant Research & Ethics Committee. I have read and understood the specific guidelines for completion of Ethics Application Forms. I am familiar with the codes of professional ethics relevant to my discipline (and have discussed them with my supervisor).		<input checked="" type="checkbox"/>
Name of Learner	Ana Lucía Cortés Dutton	
Student Number	51702461	
Date	10 March 2021	
I have discussed this project with the learner in question, and I agree that it has no significant ethical implications to be brought before the Research & Ethics Committee.		<input checked="" type="checkbox"/>
Name of Supervisor/Lecturer	Nadia Bhatti	
Date	March 2021	

APPENDIX B: SURVEY QUESTIONNAIRE FORMAT

STUDY OF THE EFFICIENCY OF ALTERNATIVES DISPUTE RESOLUTION METHODS IN THE CONSTRUCTION INDUSTRY IN IRELAND

- This survey and the data obtained will be part of a dissertation work to obtain the grade of MA Dispute Resolution at Independent College Dublin.

-The main objectives of the research are: To explore the main causes of construction disputes in Ireland and to compare the efficiency of the different Alternative Dispute Resolution (ADR) methods.

- The data obtained from the research will be treated at all times with full CONFIDENTIALITY and ANONYMITY, and if published, will not be identifiable as any individual or group.

- Participation in this survey is voluntary, and you can withdraw from the research at any time and for any reason until the date of publication. You also have the option of not answering any question you do not want to answer.

-Academic research led by Ana Lucía Cortés Dutton, if you have any query, please contact at ultreyaLucia@gmail.com

-Time to complete the survey: Approx. 3 min

By ticking the box, you are consenting to participate in this study: ☐

Note: For multiple-choice questions, if selected “other” please help to elaborate upon your answer.

1. Have you ever experienced conflict within a project/activity/work in the construction industry?

- a) Yes
- b) No

2. If you and/or company/team/project has experienced conflict, what was the main cause of this conflict?

- a) Dispute regarding contractual documentation
- b) Delays in agreed deadlines and completion
- c) Technical issues (project design, working methods, lack of supervision, etc.)
- d) Operational issues (infrastructure, equipment, materials, production, etc)
- e) Project cost overrun
- f) Payment delays
- g) Lack of team spirit/communication
- h) External hazards (weather conditions, pandemic, labour strikes, etc.)
- i) Unethical practices (bribery, fraud, extortion, etc.)
- j) Other, _____

3. Who were the main parties involved in the conflict? (Please select all that are relevant)

- a) Client

- b) Consultant representative (civil engineer, architect, project manager, mechanical or electric engineer)
 - c) Contractor
 - d) Subcontractor
 - e) Other, _____
- 4. What was the approximated size of the project where the dispute arose?**
- a) Less than €10,000,000
 - b) €10,000,000 - €25,000,000
 - c) €25,000,000 - €45,000,000
 - d) More than €45,000,000
- 5. How did the main parties involved in the dispute attempt to resolve the dispute?**
- a) Adjudication
 - b) Arbitration
 - c) Conciliation
 - d) Mediation
 - e) Negotiation
 - f) Other, _____
- 6. Approximately how long did it take to reach resolve the conflict?**
- a) 0-6 months
 - b) 6-12 months
 - c) 1-2 years
 - d) More than 2 years
- 7. What was the total average of the direct costs of utilising the Alternative Dispute Resolution used (fees & expenses paid to lawyers, claims consultant, accountant fees etc.)?**
- a) 0
 - b) Under €2,000
 - c) Under €5,000
 - d) Under €10,000
 - e) Other _____
- 8. In relation to the effectiveness of the Alternative Dispute Resolution method chosen, was the dispute:**
- a) Resolved
 - b) Partially resolved
 - c) Not resolved
 - d) Is proceeding to Court
 - e) Other, _____

9. How would you describe the relationship between the parties after the process of dispute resolution?

- a) Improved, with all issues being resolved
- b) Negatively impacted
- c) Neither improved, nor disimproved
- d) Other, _____

10. In relation to the outcome of the utilised dispute resolution method, do you feel?

- a) Satisfied
- b) Dissatisfied
- c) Other, _____

11. In your view, what did the company/project/team gain by the use of the ADR method chosen to attempt its resolution? (Please select all that are relevant)

- a) Time saving
- b) Money saving
- c) Relationships remained intact
- d) Reputational considerations (if spurious or untrue allegations were made)
- e) Strained business relationships
- f) Other, _____

12. In your opinion, how would you rate the perceived importance of the next criteria when selecting the dispute resolution method? (1 is the lowest range of importance, and 5 the highest range)

ASPECT	1	2	3	4	5
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Privacy and Confidentiality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outcome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enforceability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preservation of Relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility in procedure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Openness, Neutrality and Fairness of the process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Degree of control by parties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX C: COMPLEMENTARY RESULTS OF THE SURVEY

Individual Analysis

MAIN CAUSES OF CONSTRUCTION CONFLICT	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Disputes regarding contractual documentation	10	11	2	4	1	0
Delays in agreed deadlines and completion	9	6	2	3	1	0
Technical issues	9	3	2	2	1	0
Operational issues	5	4	0	1	1	1
Project cost overrun	10	5	2	4	1	0
Payment delays	7	2	3	3	0	0
Behavioural/Communication issues	5	3	0	1	1	0
External hazards	4	3	0	0	0	0
Unethical practices	2	0	0	0	0	0

MAIN PARTIES IN CONFLICT	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Client	12	11	3	5	1	1
Consultant Representative	10	8	3	3	1	0
Contractor	18	12	5	5	1	0
Subcontractor	10	2	2	0	1	0
External	0	0	0	0	0	1

SIZE OF THE CONSTRUCTION PROJECT	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Less than €10,000,000	15	6	2	2	1	1
€10,000,000 - €25,000,000	3	4	2	2	0	0
€25,000,000 - €45,000,000	1	1	1	0	0	0
More than €45,000	1	1	0	1	0	0

TIMING TO RESOLVE THE DISPUTE	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
0-6 months	15	5	2	1	1	1
6-12 months	4	4	3	0	0	0
1-2 years	0	3	0	3	0	0
More than 2 years	1	0	0	1	0	0

DIRECT COSTS OF THE ADR	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
€0	7	0	0	0	0	0
Under €2,000	2	0	0	0	0	0
Under €5,000	4	2	0	1	0	1
Under €10,000	3	2	1	0	0	0
More than €10,000	1	8	4	2	1	0
Don't know	3	0	0	2	0	0

EFFECTIVENESS OF THE ADR	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Resolved	14	12	5	5	1	1
Partially resolved	3	0	0	0	0	0
Not resolved	2	0	0	0	0	0
In proceeding to court	1	0	0	0	0	0

RELATIONSHIP AFTER ADR	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Improved	6	3	0	0	1	1
Negatively impacted	8	4	3	3	0	0
Neither improved, nor disimproved	6	5	2	2	0	0

SATISFACTION OF THE ADR OUTCOME	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Satisfied	12	8	5	4	1	1
Dissatisfied	7	3	0	1	0	0
Indifferent	1	1	0	0	0	0

GAINS BY THE USE OF ADR	NEGOTIATION	CONCILIATION	ADJUDICATION	ARBITRATION	MEDIATION	LITIGATION
Time saving	3	5	2	1	1	1
Money saving	8	5	3	1	1	1
Relationships remained intact	10	8	0	0	0	1
Reputational considerations	4	1	1	2	1	0
Strained business relationships	8	4	3	3	0	0
Only the resolution	1	2	2	1	0	0