

EVALUATIVE STUDY OF CONSTRUCTION ADR METHODS AND ATTITUDES OF PROFESSIONALS

OVEIS REZVANIAN PHD, LL.M, MBA, LL.B*

This article addresses the opinions and attitudes of construction professionals regarding different Alternative Dispute Resolution (ADR) methods. In order to achieve this, an industry-wide questionnaire survey has been conducted among construction professionals and the respondents were asked to express their opinions about different ADR methods based on a number of identified criteria. In addition, the participants assigned a weight in terms of importance for each of these criteria, so that more important criteria play more important roles in comparing and ranking ADR solutions. The results of this survey provide the reader with the possibility of comparing different ADR solutions with each other, not only on a general basis, but also in some specific criteria¹.

1. INTRODUCTION

ADR methods have become so diverse and they are being widely used not only in developing countries, but also in developed countries that have efficient litigation systems². While the existence of various ADR methods might provide users and practitioners with more choice, at the same time, it might result in some confusion and uncertainty, since each method has its own advantages and disadvantages. This confusion might increase in complex large disputes, such as construction disputes, because the disputed amounts are higher. The complexity of the disputes also increases the need for choosing an appropriate method. The growing use of ADR methods in recent years indicates that ADR methods must be categorised in a way that allows users to make the best choice.

The various ADR methods have different characteristics. Often, one method is similar to another method in one aspect, but completely different in another aspect. As a simple example, adjudication and conciliation are similar in terms of involvement of a neutral third party for resolution of dispute, but they are completely different when it comes to the outcome of the process.

In recent years, some attempts have been made to categorise ADR methods and classify them based on their different characteristics. In

^{*and 1} The author also has a Bachelor's degree in Industrial Engineering (Iran University of Science & Technology). The bulk of the research for this article was undertaken as a part of the author's doctoral thesis: *Relation of ADR and Arbitration in Resolution of Construction Disputes*, PhD thesis (Graduate Institute of International and Development Studies 2013).

² *Alternative Dispute Resolution Practitioners' Guide*, Center for Democracy and Governance 1998, 5.

2002, Professor Martin A Frey highlighted the parameter of involvement of different people in the process of dispute resolution and recognised five different categories, starting from unilateral action in one extreme and ending with third party adjudication in the other extreme³. In another approach, some scholars have highlighted cultural differences as contributing to the efficiency of ADR solutions and have provided some recommendations for obtaining the best result from each ADR method by emphasising these cultural differences.⁴

There have also been attempts to classify ADR solutions based on the way disputes are approached and resolved.⁵ Accordingly, ADR methods can be classified in six distinct groups: preventive, facilitative, advisory, determinative, collective, and court based ADR mechanisms. While this classification has the advantage of placing similar methods in the same groups, at the same time, it raises the problem that some features and characteristics of ADR methods are disregarded. Therefore, it is very likely that a category consists of both a cheap method and an expensive method, which have been grouped together solely based on the fact that they have similar mechanisms for resolving disputes.

The common problem of these classifications is that they do not pay attention to the different criteria that affect the efficiency and functionality of the solutions in the eyes of practitioners and users, such as cost and speed.

In this article, which is a part of my doctoral research project, I have identified all ADR solutions that are practicable in the construction industry, as well as all criteria that might affect these solutions' efficiency in the eyes of practitioners. In addition, I have attempted to give the appropriate weight for each and every criterion, so that the more important criteria play more important roles in ranking and classifying the solutions. In order to reach this aim, I conducted an industry-wide survey, in order to better understand the differences of ADR solutions in resolving construction disputes. The aim of the project is to analyse and rank ADR methods based on different weighted criteria and specifications, in order to assist practitioners and users in selecting the most efficient ADR solutions based on their priorities.

In the questionnaire survey, I allocated the evaluative criteria to three main categories, as follows:

1. *Preparation*: Availability of the process, Participants to the process.

³ Martin A Frey, *Instructor's Manual to Accompany Alternative Methods of Dispute Resolution*, Thomson/Delmar Learning 2002, 4. (Other categories are third party evaluation as a prelude to dispute resolution, third party assistance in dispute resolution, and third party adjudication in dispute resolution.)

⁴ See e.g., Gerald H Pointon, *ADR in Business: Practice and Issues across Countries and Cultures*, Kluwer Law International, 2011 Vol 2. See also, Catherine Bell, David Kahane, *Intercultural Dispute Resolution in Aboriginal Contexts*, UBC Press, 2007.

⁵ Güneş KOCA, *Model of ADR Mechanism for Turkey in Regards to Consumer Disputes in Telecommunications*, Gazi Üniversitesi Hukuk Fakültesi Dergisi 2010, 2.

2. *Proceeding*: Voluntary nature of method, Amicable nature of method, Flexibility and informality, Process selection, Confidentiality, Due process and equal treatment of parties, Third party character, Speed of process (Time), Cost.
3. *Outcome*: Outcome decider, Nature of decision, Basis of decision, Fairness of decision, Binding/non-binding, Impact on the future relationship, Precedential value.

In addition, I attempted to identify all ADR solutions that are practicable in the construction industry. As is shown in the results of the survey, this list was later slightly shortened, because not all of the solutions were known or frequently used by the respondents. The initial list of solutions was as follows:

Inaction, Acquiescence, Self-help, Negotiation, Early neutral evaluation, summary jury trial, Ombudsmen, Mediation (Private mediation, Facilitative mediation, Evaluative mediation, Court-sponsored mediation), Conciliation, Mini-trial, Dispute Review Boards, Expert determination, Adjudication, Engineer's Decision (Based on the ICE Conditions and FIDIC 1987 Red Book), Dispute Adjudication Board (Based on FIDIC Red Book, 1999 Edition), Arbitration Institutions providing early measures (ICC Pre-arbitral Referee, LCIA Rules for expedited formation of the arbitral tribunal in urgent situations, NAI Summary Arbitral Proceedings, Emergency Measures of Protection, CPR special arbitrator, SCC Emergency Arbitrators).

Following the survey, the results can be shown in a table, allowing users to compare the methods using any single criterion, as well as on a general basis.

2. METHODOLOGY

2.1. General hypotheses

Besides the main goal of the survey, there are a number of other hypotheses that I was interested to find answers to. The first hypothesis is that international arbitration is not working efficiently in resolution of construction disputes. That is to say, there is an increasing dissatisfaction in the performance of construction arbitration, and many practitioners complain of inefficiency of arbitration which is making arbitration as expensive and time consuming as litigation⁶. As a result of this dissatisfaction, the second hypothesis is that other ADR methods are taking the place of arbitration in the construction industry. The next hypothesis is that there is not one best solution for all types of construction disputes, but that a specific ADR method is most suited to each type of dispute. Thus, it is assumed that one of the safest ways for drafting dispute resolution clauses is the multi-tiered mechanism, which places

⁶ Oveis Rezvanian, PhD thesis, cited above, p 70.

a number of ADR methods in a row and therefore, provides users with more alternatives and options for resolving disputes.

2.2. Questionnaire

A questionnaire is perhaps one of the most common instruments for conducting a survey. In this survey, the questionnaire is based on the principles endorsed by Leedy⁷ and Yin⁸. Both authors recommend establishing a formal procedure to assure quality control and the maintenance of a chain of evidence.

The questionnaire consisted of a total of 51 questions, divided in three main parts. The first part included general queries about construction disputes, construction arbitration and other ADR methods as well as multi-tiered dispute resolution clauses. It also asked about the personal experience of respondents in dealing with different ADR methods. This part contained eight questions in total. The second, and most important, part contains 38 questions regarding different aspects of ADR methods and attitudes and opinions of respondents. This part aimed to give weight to the evaluative criteria of ADR methods, in order to assess every method, not only on a general basis, but also in every criterion. At the end of the survey, a few personal questions were asked in relation to the age, profession and experience of the respondents.

External validity, those behaviours that participants actually exhibit in the “real world”, provides confirmation of the survey’s validity. However, this validity is to some extent subjective, because participants, who have used one or only a few ADR methods, cannot reasonably be expected to have a comprehensive viewpoint about all other methods and their combinations. In order to decrease the risk of this problem, the second part of the questionnaire is designed in a way that accounts for the respondent’s familiarity of the different ADR methods.

2.2.1. Validity

The first step in conducting the survey was to check the validity of the questionnaire. In October 2011, the initial version was sent via email to seven interested professionals for review, completion and comments, as suggested by Babbie⁹. These individuals were mainly academics working and lecturing in the field of dispute resolution and who were familiar with research methods. The initial version of the questionnaire consisted of 121 questions in ten pages. In this email, the research project was introduced and the subject matter and main goal of the survey were explained. Then, respondents were asked to make any suggestions they might have for the improvement of the survey. It was explained that it

⁷ Paul D Leedy, *Practical Research Planning and Design*, Prentice-Hall 1997.

⁸ Robert K Yin, *Case Study Research, Design and Methods*, CA: Sage Publications 1984.

⁹ Earl R Babbie, *Survey Research Methods*, 2nd Edition, Wadsworth Publishing Company 1990.

was very important to obtain the maximum responses from the potential participants. They were also asked to make any comment or criticism on the design, coherence or length of the research.

Five of the seven individuals responded to the email. All respondents mentioned the length of the questionnaire and advised me to reduce it. The advice was taken into account and the number of questions was reduced to 51. Comments on coherence and design and personal inquiries were also taken into consideration.

2.2.2. Factor analysis

The factor analysis simplifies complex sets of data and is used to identify underlying constructs (factors) that explain correlation among a set of data. Essentially, it summarises a large number of items with a smaller number of derived items. The resultant factor loadings represent the correlation between each of the items (answers to a question) with each of the derived factors.

Because the main purpose of this research project is to study and compare different ADR methods based on their specifications and characteristics, many of the questions relate to these characteristics. The Kaiser-Meyer-Olkin¹⁰ measure was calculated to determine to what extent variables should be grouped and would be appropriate for a factor analysis. In the current study, the Kaiser-Meyer-Olkin measure was 0.785 which is considered a “middling”¹¹.

In addition, Bartlett’s test of sphericity¹² determines whether or not the correlation matrix is an identity matrix that would deem a factor analysis inappropriate. Bartlett’s test of sphericity found the approximate chi-square to be 423.628 ($df = 136$, significance 0.000), testifying to the appropriateness of the analysis and the reliability of the solution.

2.3. Respondents

2.3.1. Profile of respondents

Fairness, satisfaction, and effectiveness of a process are subjective parameters and have no existence independent of the observers.

¹⁰ The Kaiser-Meyer-Olkin Measure of Sampling Adequacy tests whether the partial correlations among items are small. It is a statistic that indicates the proportion of variance in variables that might be caused by underlying factors. (Definition sources available at: http://www-01.ibm.com/support/knowledgecenter/SSLVMB_20.0.0/com.ibm.spss.statistics.cs/fac_telco_kmo_01.htm; <http://www.uic.edu/classes/epsy/epsy546/Lecture%204%20-%20notes%20on%20PRINCIPAL%20COMPONENTS%20ANALYSIS%20AND%20FACTOR%20ANALYSIS1.pdf>) (Last accessed 11 August 2014).

¹¹ Regarding KMO, it is suggested that anything in the 0.90s was “marvellous”, in the 0.80s “meritorious”, in the 0.70s “middling”, in the 0.60s “mediocre”, in the 0.50s “miserable” and below 0.5 “unacceptable”.

¹² Bartlett’s test of sphericity is used to test if k samples have equal variances. Equal variances across samples is called homogeneity of variances. Some statistical tests, for example the analysis of variance, assume that variances are equal across groups or samples. Bartlett’s test can be used to verify that assumption. (Definition source: <http://www.itl.nist.gov/div898/handbook/eda/section3/eda357.htm>) (Last accessed 11 August 2014).

Therefore, a very important mission in this survey was to identify the participants. These participants were gathered from a number of resources. The first and principal resource was 56 International Chamber of Commerce (ICC) construction arbitration cases during the years 2004 to 2006¹³. Parties to these cases, which included contractors and employers as well as lawyers, consultants and arbitrators, were identified, some of whom were selected to participate in this survey. Another resource for identifying construction professionals was Construction Dispute Resolution Services,¹⁴ which is a professional dispute resolution firm that specialises in both residential and commercial construction disputes in the US and in selected foreign countries. Another resource was the Society of Construction Arbitrators,¹⁵ which provides dispute resolution services in the construction industry. In addition, I looked through a number of law firms and research centres which are active in the field of construction dispute resolution in different countries. I attempted to select professionals of different nationalities and experts in different types of ADR solutions, in order to reduce the chance of bias¹⁶. As a result, a total of 147 construction industry professionals from different regions of the world were finally selected.

2.3.2. Nationality of respondents

While conducting the questionnaire survey, I encountered the risk that most of the respondents might answer the questions not based on comprehensive viewpoints, but based on their familiarity with different methods. That is to say, respondents were more interested to present the advantages of the ADR method that they are most familiar with. By way of example, since construction professionals working in the UK and Australia are most familiar with adjudication, they have inherently a positive viewpoint of adjudication. Therefore, I attempted to select the participants from different countries and jurisdictions, in order to assure that they have familiarity with different ADR methods and have dealt sufficiently with different types of construction disputes. In addition, participants in this survey were selected from different categories of construction professionals (i.e. academics, attorneys, contractors, etc.) to provide more reliability.

Of the 147 selected participants, the majority were from the US (23 respondents) and the UK (16 respondents). Other respondents were from Australia (11), China (9), Iran (7), France, Switzerland, Singapore (each country five participants), India, Canada, Germany (each country four participants), Denmark, Saudi Arabia (each country

¹³ Oveis Rezvanian, PhD thesis, cited above, p. 367.

¹⁴ <http://www.constructiondisputes-cdrs.com/> (Last accessed 11 August 2014).

¹⁵ <http://www.constructionarbitrators.org/> (Last accessed 11 August 2014).

¹⁶ Earl Babbie, *The Practice of Social Research*, Cengage Learning 2012.

3 participants), Argentina, Brazil, Nepal, Norway, Romania, Russia, Turkey, UAE, Spain, Belgium, Bolivia, Egypt, Ireland, Malaysia, Netherland, Poland (each country two participants) and Bahrain, Belarus, Bulgaria, Chile, Congo, Czech Republic, Ghana, Italy, Japan, Kenya, Latvia, Mexico, Nigeria, South Africa, South Korea, Sweden (each country one participant).

2.3.3. Education, profession, age and work status of the respondents

The majority of respondents were well-educated. That is to say, 44% of the respondents had a Master's degree and/or a Doctorate, and 39% had a law degree. The rest of the respondents (18%) had a Bachelor's degree.

Regarding their professions, a significant portion of the respondents were construction users (owners, employers, contractors, engineers and architects) which totalled 38% of the respondents. Lawyers and attorneys specialised in the construction industry made up 24% of the respondents, while academics and professors made up 14%. Finally, 12% were introduced as "other" in their profession. 10% were consultants and 2% were administrators.

Demographically, the age range of the respondents was quite ample and varying between 31 and 72, with the majority (63%) between the ages 40 to 55 years. 18% were less than 40 and 13% were above 55. Also, 6% of respondents did not reveal their age. In general, the mean of age of respondents was 51.

The average level of experience of respondents in their profession was 23 years, with the highest of 45 years and the lowest of eight years.

2.4. Data collection

The questionnaire was crafted in a very simple and easy-to-use format in Google Docs¹⁷. It was first sent by email on 8 January 2012, to all 147 potential participants. In order to maximise the response rate, five and ten days after the initial email was sent, follow-up emails were sent to potential participants who had not yet responded. Of the 147 questionnaires originally sent, 93 were returned. Thus, the adjusted response rate was 63%.

2.4.1. Live interviews

After the questionnaires were dispatched, seven respondents indicated that they preferred to have an in-person talk, instead of completing a digital questionnaire. These requests were welcomed and hence, face-to-face or telephone talks were arranged. In order to get the maximum information from the interviewees, semi-structured in-depth interviews were conducted

¹⁷ Questionnaire can be found at: <https://docs.google.com/spreadsheets/viewform?formkey=dE1fVzBpdUc4SEwxdGRMWktEMlZsR1E6MQ> (Last accessed 11 August 2014).

to gather data, with a total of nine interviews being held. However, in order to minimise the variation of questions posed to the respondents, standard questions were asked. Patton advises that standardised, open-ended interviews are ideal when time is limited and respondents can be interviewed only once¹⁸. The positive point about live interviews was that there was a possibility for asking follow-up questions and repeating some questions in case the answer was not fully achieved.

It was asserted that the information provided by the interviewee would be kept confidential and only used for academic purposes. However, all respondents waived confidentiality.

2.4.2. Reliability

Cronbach's alpha¹⁹ is the most common measure of internal consistency (reliability). It is most commonly used when there are multiple Likert-scale²⁰ questions in a survey/questionnaire that form a scale and the researcher wishes to determine if the scale is reliable. Cronbach's alpha should range between zero and one. The closer the alpha is to number one, the higher the reliability of the findings.

Since the present survey consisted of two separate parts with different types of questions, it was very important to select the appropriate questions for testing reliability (Cronbach's alpha). For a number of reasons, 17 questions in the second part, regarding the importance and materiality of different criteria were selected for this mission. First, all these questions were similar in terms of type and structure. They were all Likert-scale questions with three degrees of importance (not important, important, and very important). Secondly, they were the most important part of this survey as results obtained from them would determine the importance of different criteria in evaluating ADR methods and therefore, they were expected to act as the basis of the rest of the research project.

After 93 responses were received, the results of these 17 questions were analysed using SPSS version 17. A reliability coefficient (Cronbach's alpha) was calculated and determined to be 0.813, with a standardised item alpha of 0.810, based on the assumption that all items measure the same underlying dimensions²¹. Cronbach's alpha of 0.813 indicates a good level of internal consistency for our scale with this specific sample.

¹⁸ Michael Quinn Patton, *Qualitative Evaluation and Research Methods*, SAGE Publications 1990.

¹⁹ Cronbach's alpha is a statistic that is used to determine the internal consistency or average correlation of items in a survey/questionnaire in order to gauge the reliability of the survey/questionnaire (Source: "Cronbach's Alpha: A Tool for Assessing the Reliability of Scales", *The Journal of Extension*, 37(2) 2TOT3, April 1999).

²⁰ A Likert-scale used in surveys/questionnaires is a psychometric scale that assumes the strength/intensity of experience is linear – i.e., on a continuum from strongly agree to strongly disagree. Survey/questionnaire respondents may be offered a choice of an odd number of pre-coded responses (usually five to seven) with the neutral point being an option in the form of "don't know" or "not sure" (Source: <http://www.simplypsychology.org/likert-scale.html>) (Last accessed 11 Aug. 14 2014).

3. RESULTS OF SURVEY

3.1. Part one: General questions

The first part of the questionnaire contained eight general queries about construction disputes, construction arbitration and ADR. The first question was to determine the main causes of disputes in construction projects according to construction professionals. Table 1 shows the results. Since this question was a checkbox question and respondents could select more than one checkbox, the percentages add up to more than 100%.

TABLE 1: MAIN CAUSES OF DISPUTES IN CONSTRUCTION PROJECTS

Cause	Number	Percentage
Variations to scope	69	74%
Contract interpretation	54	59%
Site conditions	50	54%
Late, incomplete or substandard information	45	49%
Obtaining approvals	23	25%
Site access	9	10%
Quality of design	36	39%
Availability of resource	9	10%
Other causes	6	7%

The second question was about the most common disputes in the construction industry. Table 2 shows the findings.

TABLE 2: MOST COMMON CONSTRUCTION DISPUTES

Dispute	Number	Percentage
Delay and disruption	71	76%
Extensions of time	54	58%
Payments	53	57%
Variations	44	47%
Warranty and construction defect liability	25	27%
Other disputes	4	4%
Negligence	3	3%

The next four questions were predicates in the form of a Likert-scale starting from “completely agree” to “completely disagree”. The first query

²¹ Samuel B Green, Neil J Salkind, *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data*, Pearson/Prentice Hall 2000.

was about the efficiency of construction arbitration and its time and cost extension. The results are shown in Table 3.

TABLE 3: EFFICIENCY OF CONSTRUCTION ARBITRATION

Predicate	Vote	Number	Percentage
Construction arbitration is no longer working effectively. It is becoming as slow and expensive as litigation.	Completely disagree	8	9%
	Disagree	21	23%
	No opinion	3	3%
	Agree	50	54%
	Completely agree	11	12%

The second query was partly correlated to the previous question and asked about the competition between arbitration and other ADR methods in the construction industry. The responses are set out in Table 4.

TABLE 4: OTHER ADR METHODS, TAKING THE PLACE OF ARBITRATION

Predicate	Vote	Number	Percentage
Other ADR methods (traditional methods like mediation, as well as new methods like partnering and DRBs) are taking the place of arbitration in construction industry.	Completely disagree	9	10%
	Disagree	31	33%
	No opinion	4	4%
	Agree	42	45%
	Completely agree	5	5%

The next question pertained to the idea that there is no single best solution for resolving all types of construction disputes. That is to say, different resolution methods might suit different sorts of disputes. This position was agreed or completely agreed by 84% of respondents.

The final question of these Likert-scale questions was about multi-tiered dispute resolution mechanisms. A majority of 61% agreed or completely agreed with the concept of multi-tiered dispute resolution clauses and believed that it is more reliable to have a set of dispute resolution methods in the contract instead of having one single method. 33% of respondents disagreed with this predicate.

The two next questions investigated the prevalence of different ADR methods and solutions in the resolution of construction disputes. Respondents were first asked to select ADR methods that they have the most experience in.

Arbitration, negotiation and mediation were the best known and most used methods, and almost 80% confirmed that they had been involved in arbitration (either as arbitrator, consultant or party) at least once in their careers.

TABLE 5: MOST PREVALENT ADR METHODS IN THE CONSTRUCTION INDUSTRY

ADR method	Number	Percentage
Arbitration	73	78%
Negotiation	67	72%
Mediation	60	65%
Conciliation	53	57%
Dispute Adjudication Board (DAB) (FIDIC new Red Book, 1999)	38	41%
Engineer's decision (FIDIC old Red Book, 1987)	34	37%
Dispute Review Board (DRB)	33	35%
Adjudication	33	35%
Partnering	31	33%
Expert determination	29	31%
Early Neutral Evaluation (ENE)	16	17%
Other methods	8	9%
Mini-trial	5	5%
Summary jury trial	3	3%

In addition, only 6% of the participants stated that they had been involved in one of the pre-arbitral solutions provided by an arbitration institution. The ICC pre-arbitral referee was highest with three participants, followed by ICDR Emergency Measures of Protection, SCC Emergency Arbitrators Rules and LCIA Expedited formation of the arbitral tribunal in urgent situations, each with one participant. There was no involvement in other solutions.

3.2. Part two: Evaluation of construction ADR methods

Questions in the second part played an important role, as they acted as a basis for the rest of the research project. The main goal of this part of the survey was firstly, to give weight to different criteria that are used for evaluation of ADR methods; and secondly, to evaluate different ADR methods, based on the criteria that were weighted in the first step.

In order to reach the first aim, I collected all evaluative criteria in a grid and asked respondents to rank these criteria in a leveraged scale, starting from "not important" to "very important". To achieve the second goal, I asked respondents to name one ADR method with which they were most familiar or in which they had significant experience. Then, I asked them to evaluate this method, based on the provided criteria.

While conducting the second step, I encountered a problem. Not all criteria were suitable for inclusion in this matrix. This was mainly because some of these criteria were not based on the opinions of the respondents, but were definite issues with no need for discussion. For example, while respondents were able to make a distinction between different ADR

methods for being cheap or speedy, they were not able to make such a distinction about the degree of intervention by a third party in different ADR methods. All they could say was what degree of intervention they preferred. In order to solve this problem, these criteria were not inserted into the table of evaluating ADR methods, but were covered in separate questions. The second part of the survey began with these three questions.

In the first question, respondents were asked to determine their preferred degree of intervention by a third party in the resolution of construction disputes. Table 6 shows the findings.

TABLE 6: PREFERRED DEGREE OF INTERVENTION

Desired approach	Number	Percentage
Each party attempts to resolve the dispute on its own side with no cooperation with the other side	3	3%
Parties attempt to resolve the dispute together, but no third party is involved	16	17%
Parties attempt + third party gives an evaluation as a prelude to dispute resolution	9	10%
Parties attempt + third party assists in dispute resolution process	45	48%
Third party adjudicates the dispute	18	19%
Total	91	98%

The outcome of an ADR method was the subject of the next question. As is shown in Table 7, the majority of respondents preferred to have a binding, but not final decision.

TABLE 7: PREFERRED OUTCOME OF THE ADR PROCESS

Outcome of the process	Number	Percentage
A compromise between parties with no external intervention	20	22%
A non-binding advice or evaluation rendered by third party	6	6%
A binding decision which is not final and can later be reopened and reviewed in court or arbitration	35	38%
A final and binding award	28	30%
Total	89	96%

In the third question, respondents were asked to select the most practical and realistic approach in dealing with construction disputes. The results are set out in Table 8.

After asking about these preferences of respondents, the next aim of this part was to determine the importance of different criteria in the evaluation of ADR methods. To achieve this, these criteria were listed in a matrix and three levels of importance were available for each of them: not important, important and very important. In order to facilitate

TABLE 8: PREFERRED APPROACH FOR MANAGING DISPUTES

Dispute management approach	Number	Percentage
There must be mutual trust and cooperative relationships in the project, so that no serious conflict occurs.	13	14%
There must be a mechanism that monitors the project progress and relations closely, so that disputes are resolved as soon as they arise.	56	60%
There must be a list of experts available to the project, so that disputes are resolved in a timely manner.	16	17%
There must be a formal procedure, like arbitration, to which the parties refer the dispute and get a thorough and precise review of the case, even if it takes a long time.	8	9%
Total	93	100%

the understanding of this matrix, I assigned scores to each level, so that “not important” had no value, “important” had one point and “very important” had two points. Therefore, the final grade of each criterion was determined as follows:

$$\text{Grade} = \text{Number of important votes} + (2 * (\text{number of very important votes}))$$

TABLE 9: IMPORTANCE OF DIFFERENT CRITERIA

Criteria	Not important	Important	Very important	Total Grade
Fairness	2	30	61	152
Speed	4	33	56	145
Cost	0	44	49	142
Participants to the process (parties, third party, etc.)	17	35	41	117
Due process and equal treatment of parties	16	38	39	116
Binding effect of decision	13	45	35	115
Outcome decider (parties, third party, etc.)	12	56	25	106
Basis of decision (agreement, domestic law, etc.)	20	42	31	104
Availability of the process	23	40	30	100
Nature of decision (award, order, advice, etc.)	18	51	24	99
Impact on the future relationship	21	48	24	96
Process selection (parties, third party, etc.)	21	52	20	92
Confidentiality	24	54	15	84
Voluntary nature of process	25	57	11	79
Amicable nature of process	34	46	13	72
Flexibility and informality	52	37	4	45
Precedential value	56	32	5	42

In the next question, respondents were asked to name one dispute resolution method that they were most familiar with. Table 10 shows the results.

TABLE 10: ADR METHODS TO BE EVALUATED BY RESPONDENTS

ADR method	Number	Percentage
Adjudication	15	16%
Mediation	12	13%
Dispute Review Board (DRB)	11	12%
Arbitration	10	11%
Dispute Adjudication Board (DAB) (FIDIC Red Book, 1999 Edition)	9	10%
Negotiation	7	8%
Engineer's Decision (FIDIC 1987 Red Book)	7	8%
Conciliation	5	5%
Partnering	5	5%
Expert determination	4	4%
Other	4	4%
Early Neutral Evaluation	3	3%
Mini-trial	1	1%
Summary jury trial	0	0%

Then, respondents were asked to give their opinions about different aspects of the selected methods, based on the criteria provided. In order to standardise the responses, the criteria were presented in the form of simple predicates, and respondents were asked to agree or disagree with these sentences by choosing one choice in a five-step Likert-type scale, from “completely disagree” to “completely agree”²².

Four ADR methods were eliminated in this analysis: Expert determination, Early Neutral Evaluation, Mini-trial, Summary jury trial, mainly because these methods were selected by fewer than five respondents and therefore, this number was not adequate for a thorough study and comparison.

In order to facilitate the study of results in this part, I assigned points to choices, as follows:

TABLE 11: POINTS ASSIGNED TO EACH LEVEL

Completely disagree	Disagree	No opinion	Agree	Completely agree
-2	-1	0	1	2

²² Although some psychometricians advocate using seven or nine levels; a recent empirical study found that a 5- or 7- point scale may produce slightly higher mean scores relative to the highest possible attainable score, compared to those produced from a 10-point scale. (Alvin Burns & Ronald Burns, *Basic Marketing Research*, 2nd Edition, New Jersey: Pearson Education 2008, 250.)

In this way, each ADR method would ultimately gain a grade in each criterion, with negative grades representing disagreement and positive grades representing agreement. All these criteria would be later weighted, so that more important criteria play a more important role in ranking different methods.

The first method voted upon for examining different criteria was adjudication. Results are shown in Table 12. Results of all other ADR methods follow in Table 13. Since numbers between -2 to 2 represent the degree of agreement or disagreement by respondents, the total amount shows the results of the assessment. For instance, in Table 12, the majority of respondents agreed that adjudication is a quick and speedy process, but they reject the position that it is a flexible method. Zero represents the absolute neutrality.

In Table 13, because the numbers of respondents for different methods are not the same, and in order to avoid this influencing the results, I divided the sum of criteria for each method by the number of respondents. In addition, in order to avoid confusion and insertion of unnecessary information, I eliminated some details and only supplied the results of assessments for all methods, in order to facilitate the comparison.

The best way to understand Table 13 is, for example, to look for an ADR method which gives parties the most control over the process. As seen in the Table, negotiation has the highest grade in this regard with partnering in second place. The worst method in this regard is adjudication which gives parties the least control.

4. DISCUSSION

Perhaps a great advantage of this survey, in comparison to other surveys conducted in this area, is that it contained a comprehensive list of all relevant ADR methods. Another advantage of this survey is that it attempted to allocate appropriate weights to different criteria and subsequently rank them by their importance and materiality. Then, it attempted to evaluate all ADR methods, based on these criteria. Now, it is time to combine these results in order to improve the quality of evaluation. In particular, this combination is necessary because, since these criteria have different importance, if we consider all these criteria with the same weight and importance, the results of assessment would be incomplete and it would not reflect the exact findings of the survey.

On the one hand, I have the weights of different criteria and on the other hand, all ADR methods are evaluated by construction professionals based on the criteria provided. Therefore, one way to apply these weights to those evaluations is to multiply them into each other. Table 14 shows the results of this calculation.

TABLE 13: EVALUATION OF DIFFERENT ADR METHODS BASED ON DIFFERENT CRITERIA

Criterion	Adjudication	Arbitration	Conciliation	DAB	DRB	Engineer's decision	Mediation	Negotiation	Partnering
Availability of the process	-0.40	-0.55	0.80	-0.89	-0.45	-0.43	0.83	1.57	1.00
Participants to the process (parties, third party, etc.)	0.60	0.18	0.40	0.78	0.55	0.86	0.33	1.71	1.20
Voluntary nature of Process	-0.80	-0.91	0.80	-1.44	0.64	-1.14	1.17	1.71	1.40
Amicable nature of Process	-1.13	-1.09	0.60	-0.78	0.64	-0.43	0.75	1.00	1.20
Flexibility and informality	-0.73	-1.00	0.00	-0.89	0.73	-0.57	0.92	1.29	0.80
Process selection (Parties, third party, etc.)	-0.53	0.73	0.20	-0.56	-0.18	-0.43	0.83	1.29	1.20
Confidentiality	0.00	0.91	0.40	-0.44	-0.64	-1.00	1.00	0.71	-0.20
Due process and equal treatment of parties	0.47	1.00	0.60	-0.11	0.55	-0.29	0.75	0.57	0.80
Speed	1.07	-1.09	0.20	1.22	0.36	1.43	0.42	-0.14	-0.20
Cost	0.13	-1.00	0.40	0.56	-1.45	1.14	0.58	0.71	-0.20
Outcome decider (parties, third party, etc.)	0.20	-0.18	0.2	0.56	0.45	0.71	0.33	0.86	0.60
Nature of decision (award, order, advice, etc.)	0.53	0.91	-1.00	0.67	-0.18	0.29	-0.58	-0.43	0.20
Basis of decision (agreement, domestic law, etc.)	0.27	0.91	-1.40	0.33	-0.55	0.43	-0.50	-1.43	-0.40
Fairness	-0.07	1.09	0.40	0.89	1.09	0.43	0.83	0.71	0.80
Binding effect of decision	0.87	1.82	0.00	1.11	-0.45	1.00	-0.58	-1.57	-1.20
Impact on the future relationship	-0.67	-0.73	0.60	-0.44	1.09	-0.86	0.83	1.14	1.80
Precedential value	-0.13	1.00	-0.80	-0.44	-1.45	-0.43	-1.42	-1.29	-0.40

Table 14 provides very interesting information. As a general matter, it can be helpful to first look at the total grade for each method, since it gives a general evaluation of its position according to construction users. Interestingly, two traditional and well-known methods for resolving construction disputes stand at two opposite extremes: negotiation has gained the highest score and arbitration is in the lowest position.

When considering the total scores of different ADR methods, one interesting trend emerges: when moving from adjudicative methods to soft and facilitative methods, the general satisfaction of respondents' increases. That is to say, despite the fact that most respondents stated that they prefer to have a binding decision at the end of the dispute resolution process, when other criteria come into play and it comes down to general satisfaction, it seems that parties still prefer soft and facilitative methods to adjudicative ones. DRB should be considered an exception to this trend. DRB – as shown in Table 14 – is criticised by respondents, mainly because of its expense, especially in small projects. But apart from DRB, a division is apparent between arbitration, engineer's decision, adjudication and DAB (adjudicative methods) on the one hand and conciliation, mediation, partnering and negotiation (facilitative methods) on the other.

4.1. Arbitration

Arbitration has the lowest score in this survey. This result confirmed my first hypothesis. As is shown in Table 14, many criteria gained negative scores concerning arbitration or – if positive – they were not high. Although in some criteria, namely those related to the outcome of the ADR method, arbitration stands remarkably high, the average score of all the criteria is not in arbitration's favour.

Speed and cost of arbitration are the two criteria with the least degree of satisfaction. It is shown that arbitration is the slowest method of all ADR methods. Although arbitration was also ranked negatively with regard to cost, it was not selected as the most expensive method, since DRB was first.

Respondents indicated that arbitration is not always easily available to parties. This may be surprising, because I assumed that as long as a valid arbitration agreement exists between the parties, any party can refer a dispute to arbitration. But it seems that this is not the view of construction users. In one face-to-face interview, the respondent explained that arbitration is not thought of as an easily available method for two main reasons. First, arbitration can be triggered only when there is a valid arbitration agreement. In contrast, some other methods, like negotiation, do not need an agreement and therefore, they can be initiated at any time. In addition, some other methods, like adjudication, are included

TABLE 14: EVALUATION OF ADR METHODS BASED ON WEIGHTED CRITERIA

Criteria and their weight	Adjudication	Arbitration	Conciliation	DAB	DRB	Engineer's decision	Mediation	Negotiation	Partnering
Availability of the process	152	165.82	60.8	135.11	138.18	65.14	126.67	108.57	121.6
Participants to the process (parties, third party, etc.)	145	-158.18	29	209.44	171.36	207.14	60.42	-20.71	-29
Voluntary nature of process	142	-142	56.8	110.44	-219.45	223.14	82.83	101.43	-28.4
Amicable nature of process	117	21.27	46.8	117	63.82	100.29	39	200.57	140.4
Flexibility and informality	116	147.64	116	12.89	105.45	-33.14	87	66.29	92.8
Process selection (parties, third party, etc.)	115	198.64	0	127.78	-52.27	115	-67.08	-180.71	-138
Confidentiality	106	-38.55	84.8	58.89	115.64	75.71	35.33	90.86	63.6
Due process and equal treatment of parties	104	151.27	-20.8	92.44	-56.73	44.57	-52	-148.57	-41.6
Speed	100	-54.55	120	-44.44	9.09	-14.29	133	157.14	100
Cost	99	135	-99	66	-18	56.57	-57.75	-42.43	19.8
Outcome decider (parties, third party, etc.)	96	-96	57.6	-42.67	122.18	-54.86	80	109.71	172.8
Nature of decision (award, order, advice, etc.)	92	66.91	73.6	-40.89	33.45	-39.43	76.67	118.29	110.4
Basis of decision (agreement, domestic law, etc.)	84	114.55	50.4	-9.33	-30.55	-84	84	60	-16.8
Fairness	79	-71.82	63.2	-96.56	50.27	-90.29	92.17	135.43	110.6
Binding effect of decision	72	-78.55	43.2	-40	45.82	-30.86	54	72	86.4
Impact on the future relationship	45	-45	27	-30	32.73	-25.71	41.25	57.86	36
Precedential value	42	57.27	-33.6	0	-38.18	-18	-59.5	-54	-16.8
Total	572.72	373.72	675.8	626.1	472.81	496.98	756.01	831.73	783.8

in some domestic legislation and therefore, parties can trigger these methods at any time without the need for a separate agreement. The second reason is that, even where there is a valid arbitration agreement, it does not necessarily mean that arbitration can start immediately, since it takes time to initiate the proceedings and appoint the arbitrator(s). Considering the nature of construction disputes and the large amounts of money involved, this waste of time is exactly in conflict with the parties' need to resolve disputes in a timely manner.

Additionally, arbitration is not considered to be a voluntary process by construction users because there is a difference between the authority of making an arbitration agreement and the obligation to participate in arbitration proceedings. While making an arbitration agreement is voluntary, once the agreement is concluded, it is no longer a voluntary process, because every dispute between the parties should be referred to arbitration. Therefore, when a dispute occurs, arbitration is an obligation that no party can refuse. In addition, arbitration is not an amicable way of dispute resolution and therefore, it cannot reasonably make a positive impact on the future relations of the parties.

The final weakness of arbitration according to construction users relates to the person(s) who renders the decision on disputed issues. Again, in one of the live interviews, it was highlighted that often, the arbitrator is a lawyer with no technical knowledge and therefore, either it takes a long time for him to understand the dispute, or he makes an immature or incorrect decision. This problem has been studied and discussed frequently in recent years, and the importance of assigning the appropriate person for arbitrating complex cases has been highlighted. However, the results of this survey show that it is still a source of concern for construction users.

The story of arbitration is not all bad. There is a bright side. The first and most salient advantage of arbitration is the fairness of the process. No other method has such a position of fairness in the opinion of construction users despite all the complaints about cost and time extensions. This is perhaps because arbitration provides equal opportunities for parties to present their case and bring all details and information to the table. This satisfaction is also confirmed by respondents as arbitration was selected as the best method in terms of due process and equal treatment of parties.

Another strong point of arbitration is the outcome of the process. This outcome has been broken down into three criteria: nature of decision, basis of decision and binding effect of decision. Not surprisingly, in all three criteria, arbitration was ranked highest, so it can be called the most reliable ADR method in terms of final outcome of the process. This result is understandable, because the outcome of arbitration is binding and final based on an international convention to which most countries in the world are signatories.

Arbitration also provides the best precedential value among all ADR methods, since most arbitration cases are recorded and they – especially in institutional cases – leave a complete record of the case, albeit not easily accessible due to confidentiality restrictions. However, it should be noted that precedential value is selected as an unimportant criteria by construction users.²³ Therefore, its precedential value does not remarkably affect the position of arbitration.

Confidentiality is another strong point of arbitration; respondents selected it as the second most confidential method after mediation. Most respondents agree or completely agree that arbitration provides a confidential solution for those parties who want to resolve disputes concerning their trade secrets.

It might be seen as strange that most respondents agree on the strong points of arbitration and select it as the best on such criteria, but that arbitration is the least favoured ADR method. This might raise the question of what is wrong with arbitration. Why does arbitration rate so highly in some criteria and so badly in others, as well as overall? In response, it is no exaggeration to say that arbitration loses much of its benefits to its length and cost, as well as its adversarial and heavy nature. Perhaps, it is true to say that construction users might prefer to work with an ADR method which is less confidential, less fair, with no precedential value, but which resolves the dispute in a cheap and timely manner in a more amicable fashion and with a better impact on the future relationship of the parties.

4.2. Other ADR methods

Negotiation, perhaps the oldest ADR method, is still the favourite solution of construction users and stands in opposition to arbitration: some of the weak points of arbitration, namely, length, cost and inflexibility, are the strengths of negotiation. However, conversely, while final and binding award is a unique advantage of arbitration, negotiation has little to say in this regard, since it does not provide parties with any binding outcome.

4.2.1. Availability

As to the availability of the process, negotiation is the preferred method. Mediation and conciliation follow. In general, it seems that soft methods which do not necessarily require a separate agreement to be entered into (i.e. negotiation and mediation) are more readily available than adjudicative methods which should come with a separate agreement at the time of concluding the contract. Even for solutions like DRB, some arrangements must be made between parties at the beginning of the project.

²³ Table 9: Importance of different criteria.

4.2.2. Participants

As to the involvement of different people in the process of dispute resolution, negotiation is again a solution that provides the most satisfaction for users. This is reasonable, because in negotiation, only the parties are involved with no third party intervention. In contrast, in other solutions, the intervention of third party is necessary for facilitating or adjudicating the situation. While intervention of a third party might be facilitative, it might also have some downsides. For example, since the third party is a newcomer to the dispute, he/she might need some time to understand the case, which might decelerate the resolution process. In many cases, even after understanding the case, the third party will not view the dispute in the exact way the parties do.

The preference of users for less third-party intervention is confirmed by their choice of partnering as their next preference. This is mainly because partnering also enables parties to manage their own disputes with the least external intervention.

Interestingly, when it comes to solutions with third party intervention, respondents prefer an adjudicative role for the third party. In other words, it seems that the first preference of parties is that they resolve the dispute with no intervention. Where this is not possible and parties agree on intervention of a third party, they prefer this intervention to be adjudicatory. Arbitration is an exception to this explanation and does not follow this trend.

4.2.3. Amicability and impact on future relation of parties

The voluntary and amicable nature of ADR solutions is the next two criteria which have similar weights. They also have a close correlation with the impact of an ADR method on the future relations of parties and they follow the same trend. As expected, negotiation and partnering are selected as the most amicable and voluntary processes, followed by mediation and DRB. Arbitration and adjudication are placed lowest here.

4.2.4. Flexibility and informality

“Flexibility and informality” was not selected as an important criterion. In fact, along with “precedential value”, “flexibility and informality” was the least important criterion in evaluating ADR methods. Respondents chose arbitration as the least flexible ADR method, and other adjudicative methods (adjudication, DAB and Engineer’s decision) were chosen next. Not surprisingly, negotiation and mediation were the highest ranked solutions on this criterion.

4.2.5. Process selection

When it comes to selecting a process, the main question is who runs the whole dispute resolution process and decides on the conduct of the proceedings. Responses to this question were interesting, because arbitration did not follow the same trend as other adjudicative methods. This is mainly because in other adjudicative methods (adjudication, DAB and Engineer's decision), unlike arbitration, a predefined framework exists for conduct of the process. For example, in adjudication (as in the British "Construction Act"²⁴), disputed issues are rigidly scheduled to be resolved in 28 days. Therefore, parties do not have authority to conduct the process in another way. However, arbitration is the only adjudicative method that allows parties to conduct proceedings according to their preferences. This characteristic of arbitration, although criticised for time and cost reasons, placed arbitration higher in comparison to other adjudicative methods. Negotiation and partnering were the preferred solutions on this criterion.

4.2.6. Confidentiality

It is undisputed that arbitration is the most confidential ADR solution. Arbitration is regarded by parties as the method they can trust the most not to reveal their secrets. After arbitration, mediation is perhaps the second most confidential method²⁵. There is no correlation between the adjudicatory nature of an ADR method and its confidentiality. For example, while Engineer's decision and partnering have totally different adjudicatory approaches, they are selected as the two least confidential ADR methods.

4.2.7. Due process and equal treatment of parties

With the exception of Engineer's decision (FIDIC Red Book, 1987), all ADR methods gained a positive score in terms of due process and equal treatment of parties. Perhaps this negative score is mainly because the engineer, who is expected to act as a neutral third party, is appointed by the employer and therefore, there are serious concerns regarding his/her impartiality. This criticism led FIDIC to revise its standard form of construction contract (FIDIC Red Book, 1999) and replace the engineer with the Dispute Adjudication Board (DAB).

Arbitration is thought of as the best ADR method for due process and equal treatment, with conciliation second.

²⁴ Part II of the Housing Grants, Construction and Regeneration Act 1996, which came into force on 1 May 1998.

²⁵ Oveis Rezvanian, PhD thesis, cited above, p. 245.

4.2.8. Speed and cost

Time and cost extensions were linked by most respondents. This is understandable, because when the time taken to resolve a dispute increases, it imposes extra costs on the project itself. In addition, parties spend more money on proceedings, attorneys, third parties, etc. This correlation between time and extra cost is largely shown in the results of the survey, but there are two exceptions: DRB and negotiation. Although DRB is the most expensive dispute resolution method, it resolves disputes in a very timely manner. Conversely, negotiation is known as a cheap ADR method that might not always resolve disputes quickly. Evaluation of other methods confirms the correlation between time and cost.

4.2.9. Outcome decider

Who decides the outcome of the dispute resolution process: the parties or the third party? Is this decision-maker the appropriate person for adjudicating or settling the dispute? Arbitration gained the lowest score in this regard, perhaps as a result of complaints regarding arbitrators with no – or little – technical knowledge and background. All other methods gained positive scores in this regard. One possible reason is that in other adjudicative methods (DAB, Adjudication and Engineer's decision) the third party is usually an engineer rather than a lawyer. However, there is no clear correlation between evaluation of this criterion and the adjudicative/facilitative nature of the ADR method.

4.2.10. Nature, basis and binding effect of the decision

The outcome of an ADR solution is perhaps one of the most important factors in evaluating the efficiency of different methods. In this survey, this factor was evaluated by three criteria: nature of the decision (award, order, decision, etc.), basis of the decision (agreement, domestic law, etc.) and binding effect of the decision.

Regarding the nature of the decision, it is important to know whether the decision is an award, order, advice, or any other form, because different forms of outcomes might have different consequences. Similarly, when respondents were asked about the basis of a decision, it is important to know whether the outcome of the method is based on an agreement between the parties or is supported by an international convention or domestic law. After all, the binding effect of the outcome is an important criterion for construction users. Since all these criteria are constituent elements for the outcome of ADR solutions, they might have similar weights and also show similar trends in evaluating ADR methods. Unsurprisingly, arbitration gained the highest score in all three criteria and negotiation the lowest. In addition, as we move from adjudicative

methods to facilitative and soft ones, the binding effect of the outcome and the reliability of its basis decrease.

4.2.11. Fairness

Fairness is the most important criterion for construction users. It is placed even higher than cost and speed of process. Interestingly, none of the ADR methods scored negatively in this regard; in other words, no ADR method was considered unfair. However, different methods gained different levels of fairness. Arbitration is the fairest method and DRB is next.

4.2.12. Precedential value

Precedential value is the least important criterion to construction users. As expected, arbitration came first under this criterion. But there is no meaningful relation between the scores of other ADR methods in this regard.

4.3. An analytical review

The analytical review of the results of this survey provides a number of useful pieces of information:

First, it provides a comprehensive list of ADR methods that are used in the construction industry. Second, it provides all evaluative criteria that examine different aspects of ADR methods. Third, since these criteria might have different importance in eyes of construction users, each method is allocated a weight, so that more important methods play more important roles in evaluation of ADR methods. Weights of criteria are based on the votes of the respondents. Fourth, all ADR methods are evaluated in all criteria, and the final results of evaluation are based on the weighted criteria.

Collectively, this information provides an analytical matrix that enables users to compare different ADR methods, not only on a general basis, but also based on every single criterion. For example, a construction user is concerned about his/her trade secret and is looking for a confidential method for resolving his/her disputes. At the same time, he/she does not want to spend large amounts of money in resolving the dispute. All this user needs to do is to look at the two rows of confidentiality and cost in the table and select among available methods. Arbitration is the most confidential method and mediation is the next. Then, looking at the cost row, it is clear that arbitration is a very expensive method, but mediation is rated positively. So, perhaps mediation is a good choice for this user. If the user expresses a preference for an adjudicative method for resolving the dispute, adjudication is the first adjudicative method which has a good rating both in confidentiality and cost.

If a user intends to select among a number of ADR methods and he/she is uncertain about this selection, he can simply consider the total score of each method, because it represents not only the preferences of construction users in different criteria, but it also gives appropriate weight to these criteria.

5. CONCLUSION

While construction projects are growing and construction disputes are becoming more diverse, selecting the appropriate ADR method for resolving different types of disputes is becoming more difficult.

One of the best ways for examining different ADR methods and highlighting their advantages and disadvantages is to ask professionals that have worked with these methods in real cases. This survey conducted such an examination. All evaluative criteria were weighted and therefore the importance of different criteria was taken into account.

Arbitration, as one of the most widely used ADR methods, is in a paradoxical situation. On the one hand, respondents agreed that no other ADR method can provide such a binding and final award as arbitration. In addition, fairness, confidentiality, precedential value, due process and equal treatment of parties in arbitration were remarkably higher than other ADR methods. However, in terms of formality, speed, cost and its adversarial nature, arbitration was highly criticised by respondents. Finally, by allocating the weights to different criteria, arbitration delivered the least degree of satisfaction, despite all of its credentials.

Negotiation stood directly opposed to arbitration. While negotiation cannot render any sort of binding decision and while it has little to offer in terms of confidentiality, its many advantages are worth noting. These advantages were not only flexibility and low costs, but also amicability and availability of the solution.

The same analysis was conducted for all other ADR methods. As a general matter, as we move from adjudicative methods to soft and facilitative methods, general satisfaction of users increases.

This analysis can be used by all construction users who want to select an ADR method based on one or more criteria. It also helps users to select an ADR method based on the cumulative experiences and opinions of 93 professional construction users.