Evaluation of Alternative Dispute Resolution (ADR) Methods in Construction Dispute Management in Nigeria

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Abstract

One key challenge in construction contracting is dispute among participants. Disputes have stalled construction successes at many instances which deserve serious attention. Construction dispute can be very costly, can cause delay and yet very adversarial. Diverse alternative dispute resolution methods (ADR) exist. Each method has its strength and weakness; the choice right method any time can ensure better results in dispute resolution. Notwithstanding, recent studies concludes that construction dispute management is not doing any better than the past. It therefore becomes imperative to evaluate the resolution mechanisms to find ways for improvement. Several resolution mechanisms called alternative dispute resolutions (ADR) have been developed in which this work evaluates 11 most prominent of them. The research will assess the most understood and most favoured methods by disputants, and also the most widely used methods in the industry. To obtain requisite data, 385 questionnaires were randomly distributed among construction experts of diverse disciplines. In a 5-point Likert's scale, respondents were requested to rate their level of understanding, the preferred method for dispute resolution and the extent at which each method is used in the industry. Mean values were computed and ranked and t distribution applied to determine the significance of the ratings. Spearman's correlation was used to establish the kind of relationship that exists between the factors evaluated. The kind of relationships that exist between stakeholders' understanding and their preferred methods as well as the methods widely used were established. Findings show that less friendly ADR methods that are normally closer to litigation in nature such as arbitration are the most widely used. This occurs by virtue of the significant positive correlation between the methods widely understood and those mostly used as well as those perceived as suitable. by implication, if the mindset of stakeholders in the industry is changed to perceive a method as suitable it will enhance preference on the friendlier methods. , and be, it will enhance the application of such methods in dispute resolution, thus, improving performance. This can be achieved by ensuring the mechanism of such methods are well understood. It is recommended that efforts be made to educate stakeholders towards changing their mindset for positive views on other ADR methods other than arbitration.

Keywords: Alternatives Dispute Resolution (ADR), Construction Disputes, Dispute Management, Dispute Resolution Mechanism, Nigeria Construction Industry

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Introduction

Dispute is a common occurrence in construction projects occasioned by its complexity, long contract period, magnitude, multi-tasking nature and the myriads of activities to undertake by a host of participants in a single project among others (Ilter & Dikbas, 2008, Idowu, Ogunbiyi & Hungbo, 2015). Construction success has been hampered by dispute in many instances (Rauzana, 2016, Sakate and Dhawale, 2017, Adeku, 2018, Danja, Gandu and Muhammad, 2021). Dispute itself has often been referred to in literature as conflict ((Rauzana, 2016, Sakate and Dhawale, 2017, Adeku, 2018). Even though attempts have been made to differentiate the two terminologies (Ejohwomu, Oshodi and Onifade, 2016, Danja et al., 2021) many scholars still interchange the terms in written texts. Apart from the stalled projects success with cost consequences, construction disputes or conflicts have caused strained relationships and created bad reputations among construction stakeholders (Jannadia, Assaf, Bubshait and Najib, 2000, Cheng, Tsai and Chiu, 2009). Moreso, it was found that cases of dispute tend to increase, take longer lead-time to resolve, with high claims causing not only strained relationships and delay but overruns projects cost objective (Greenwood and Roe, 2016, Ekhtor, 2016, Kalyan, 2019). The long time dispute takes to resolve is of great concern (Danja et al., 2021). Efforts have been made to improve dispute management situation through research attempts along better understanding of the causes and sources of dispute (Kumar and Divakar, 2015 and Rauzana, 2016), the appraisal of preventive strategies (Ekhator, 2016) and framework for proactive dispute management (Nguyen, 2011 and Danja et al., 2021).

Dispute resolution procedures and mechanism have also been appraised (Sakate and Ghawale, 2017), added to the several dispute resolution models to suite different situations. However, construction dispute-related impediments still abound (Ekhtor, 2016). It becomes imperative to inquest to what extent practitioners understand the various resolution models, which model is most preferred and which widely is applied. Also to examine the relationship that exists between methods most understanding, most preferred and the ones widely use as relate to dispute management. Bridging the gap on these factors will offer better understanding of the subject to enable a more feasible management approach. Ige (2017) asserted that the dispute resolution method disputants have confidence and most willing to submit to is prerequisite to management success. Along this backdrop, findings here will accord the opportunity of choice of resolution method and the design of strategy that disputants bestow confidence and trust. Identifying the dominant methods widely applied in the sector can also enable the depiction how it differs with the method preferred by disputants including associated problems by virtue of the difference. Therefore, findings herein will offer a solid ground for design of proper dispute management strategies along cost effectiveness, quick resolution and other beneficial tendencies. This research therefore sets to:

1. Examine the extent of understanding of ADR methods in the construction sector.

2. Assess the degree of application of each method in the Nigerian construction sector.

3. Identify the ADR methods viewed as most suitable for construction.

4. Establish the relationship between understanding, preference and extent of application of ADR methods in the construction sector.

Literature Review

Origin of construction dispute

Construction characteristics itself form the bedrock for the origination of dispute during construction procurement. For example, different people working to achieve

common construction objectives are most likely to differ in opinion on a particular matter ((Ejohwomu, Oshodi and Onifade, 2016) which is often influenced by individual traits (Naismith, Sethi, Ghaffarian Hoseini and Tookey, 2016). Explaining further, Femi (2014) explained how construction is project-based by nature that brings together diverse individuals from diverse backgrounds into a project life cycle; during the delivery process, those individuals often having diverse needs and exhibiting diverse behaviours which cause disagreements, thus, aiding dispute frequency and challenges. The increasingly globalization of the industry makes it become more multicultural and multidisciplinary. Diner and Lucas (2020) observed that people of diverse backgrounds and culture coming together are most likely to understand and behave differently on a particular matter. Ehjowomu, Oshodi and Onifade (2016) posited that human interactions and management make differences become a critical component of construction project lifecycle. Norby (2018) then described six types of conflicts arising from differences among disputants which are interpretation conflict; argumentation conflicts, value conflicts, conflicts of interest, role conflicts and personal conflicts.

Danja et al. (2021) saw human behaviours as key influencers to dispute management outcome. The scholars went ahead to assess the dominant traits in construction team members. The dominant traits during dispute in clients', contractors' and consultants' teams were identified. The research found that contractors are most likely to evade dispute situations and prolong disputed matters while the clients tend to dominate dispute situations without considering the interest of other parties and yet could be so emotional and expectant on dispute matters. The research suggested that dispute managers should put the identified traits of each team into consideration while choosing an ADR method and strategizing dispute management in construction.

The alternative dispute resolution (ADR) methods

Alshahrani (2017) classified dispute resolution in a general sense into three: litigation, arbitration and alternative dispute resolution (ADR). Litigation is a complex and formal process using public courts, being regulated by a substantial number of rules and procedural requirements that may vary based on the state or county of the judicature. Arbitration even though is an out of court settlement follows similar court procedures and using a third party in its process. This makes arbitration having possibility of being adversarial, costly and lengthy like litigation. The ADR consists of a variant of systems where disputes are resolved privately without going through litigation in the public courts and with less court procedures.

Literature lists arbitration among ADR methods and defines ADR as encompass of a range of procedures other than litigation designed to resolve conflicts (Bvumbwe and Thwala, 2011). The essence of ADR is to deemphasize courts during dispute resolution process. Therefore, ADRs often limit the influence and effect of the normal legal process in resolving dispute between parties and are comparatively cheaper, quicker and less adversarial (Hayati, Latief Rarasati and Sasmita, 2017). Eighteen (18) ADR methods and their features are summarised in Table1.

Table 1: Kinds of ADR

	ADR methods	Features
1	Negotiation	• The parties attempt to agree on a settlement voluntarily. • No neutral is required; disputants control the process and the outcome themselves. • Believed to be the most commonly used in general.
2	Mediation	• Neutral attempts to aid communication and negotiation, the neutral has no power to impose a solution on the disputants; instead, the mediator assists them in shaping solutions to meet their interests • Parties reach their own settlement.
3	Conciliation	• Neutral behaves makes his own evaluation, and suggests a settlement for the dispute • The settlement is not binding on the parties Conciliation
4	Expert determination	• Neutral is an expert in the particular trade in dispute. • Binding, unless the expert did not address the issue put to him Expert Determination
5	Adjudication	• Neutral(s) may be one or three persons. Decision is usually Adjudication binding until overturned in arbitration or litigation
6	Early Neutral Evaluation (ENE)	• A judge appointed evaluator educates the parties on their chances of winning in litigation. • Disputing parties submit their case to a neutral evaluator through a confidential "evaluation session". • The neutral evaluator considers each side`s position and renders an evaluation of the case.
7	In-Court-Annexed Arbitration	• Cases that meet certain criteria (especially small civil disputes) are assigned to arbitrator(s) (which may be a judge). They give a non-binding decision. Either party may insist on normal court trial if dissatisfied.
8	Concilio-Arbitration	• A neutral is provided with details about each party's case at the commencement of the process • From the details he forms and opinion on the likely outcome if the dispute were to be litigated. • Disputants are informed of this opinion and have the opportunity to revise their case. • The neutral then writes a final opinion which is binding after a certain period of time. • A cost penalty occurs if the final award is not accepted and litigation is undertaken unsuccessfully.
9	Facilitation	• A facilitator acts as a shadow project leader. He tries to make the team to act on what they should be acting on. He clarifies the issues and makes the team to function effectively, without being involved in substantive issues.
10	Med-Arb/Arb-Med	• Med-Arb: This begins with mediation. • If mediation fails, the mediator becomes the arbitrator or some other person will be appointed for that purpose. • Arb-Med: the parties begin with arbitration, but after the award is made, the arbitrator will switch to mediation.
11	Expert tribunal (Mini-Trial)	• Used by parties to test for the possible outcome of their case. Their counsels present an abridged version of their cases before a panel chosen by the parties. The panel decides on the case. • Usually after a case has gone to court
12	Ombudsman	• Neutral attempts to aid communication and negotiation • Parties reach their own settlement.
13	Private Judging (Rent-A-Judge)	• A retired judge is rented to privately adjudicate for the parties.
14	Dispute Review Board (Dispute Resolution Board)	• Neutral(s) is(are) an expert(s) in the particular trade in dispute. • Binding, unless the expert did not address the issue put to him

15	Arbitration	• This is a private legally-binding process. • A neutral third party is at the heart of the situation. • The arbitrator considers documents and facts that concern the situation and can make a decision that favors one side if the parties fail to achieve consensus. • The decision can't be cancelled by law courts, except in some cases.
16	Appellate ADR	• In this process, state statues or court rules establish criteria that identify cases eligible for arbitration
17	Fact finding	• This process is the act of determining the facts and issues involved in a case or in a situation.
18	Judge hosted settlement conference	• This process is similar to mediation but instead of a mediator a senior judge assists.

Source: Animashaun and Odeku (2014), Karape and Josji (2018), Danja et. al. (2021).

Each of the identified ADRs has different features as well as attributes that can offer different values when applied in dispute resolution (Idowu, Ogunbiyi and Hungbo, 2015). Alshahrani (2017) believes that there are cost factors in dispute resolution that are avoidable when proper choice of resolution method is done. The factors were classified into direct and indirect cost which can sum up to 5.9% of the contract sum. The cost items listed in the direct cost category are legal services, arbitration, consultants and in-house resources. The indirect category is delay of the project, adverse performance of the project, reduced morale and the erosion of confidence and trust in working relationships. Others are adverse reputational impact, emotional impact on people involved and the loss of people to the industry because of wasted effort, including disillusionment, frustration and the lost opportunities for future work due to the destruction of business relationships. Among the existing ADR methods, some can contain the afore anomalies and offer better cost value if properly applied (Alshahrani (2017). Danja et al. (2021) also believe that when dispute is managed in a proactive way using the right choice of ADR method, it will offer good management results.

The Preferred ADR method

In Thailand, comparison of various stakeholders' perspectives on dispute resolution methods has been made through research and the preferred methods of ADR for dispute management identified as "Negotiation" and "Conciliation" (Trangkanont, 2017). These methods precede arbitration and litigation. The frequency and effectiveness of 'soft' conflict resolution approaches such as conciliation, negotiation and smoothening were analysed in the United Kingdom's (UK) construction sector by Hanse n-Addy (2013) and they were found to be quite popular among stakeholders over litigation and arbitration. Also, negotiation was found to be the most effective construction dispute resolution method in United Arab Emirate (UAE) (El-Sayegh et al., 2020). While Idowu, Ogunbiyi and Hungbo (2015) found that adjudication and negotiation respectively are mostly used in Nigeria because of satisfaction litigants derive in terms of cost, time and sustenance of relationships. Alshahrani (2017) found negotiation as widely used by both public and private sectors, while mediation and arbitration are widely employed by the private sectors only in the Kingdom of Saudi Arabia (KSA). Literature, therefore, tends to submit that litigation, arbitration, negotiation, adjudication and mediation are widely used in construction dispute resolutions in many countries.

Acceptance of dispute resolution methods by disputants

The acceptance of a system is prerequisite for successful implementation in any organization. Talukder (2012) stated that where an organization adopts a system not accepted by those involved, such system can fail in implementation thrust. The diverse alternative dispute resolution methods have diverse characteristics and can be employed

to suit particular instances when dispute arises in construction contracts (Alshahrani, 2017). Some methods are more complex than others and each method having advantages and disadvantages. The varying characteristics can affect acceptance, understanding and adoption of a method during dispute resolution. In the diffusion theory of innovations adoption, Rogers (1995) established that simple and easily understood models are most likely to be rapidly accepted and adopted (Patel and Connonlly, 2007). Notably, the degree of understanding (Hayati, Latief, Rarasati and Sasmita (2017) affects the level of acceptance of a new system in an organization which also affects success in implementation. Regards dispute, Alshahrani (2016) stated that there are diverse factors which govern the success of dispute resolution efforts such as the level of acceptance or willingness to submit to dispute resolution method by disputing parties. Ige (2017) corroborated and reported cases where outcome of conciliation depends largely on willingness of the parties to submit to it, further influenced by how they understand it.

From a wide literature search, 32 attributes of ADR methods were presented by Ilter and Dikbas (2008) and adapted in Table 2. Stemming from the understanding that the attributes affect the choice of methods in a dispute resolution process, the researchers sought to find which attributes are less relevant in the choice of ADR methods. In developing an implementation model, the attributes were evaluated and most relevant ones used to avail decision makers a systematic, transparent, and logical approach for prioritizing the relative importance of the factors so as to improve objectivity and reduce human biasness in making decisions on the choice of methods.

Table 2: Attributes of ADR techniques

	ADR Attributes	Brown and Marriott (1999)	Cheung (1999)	David (1988)	Goldberg et al. (1992	Harmon (2003)	Hibberd and Newman (1999)	Mohammad (2005)	Suen (2001)	Yiu and Cheung (2005)	York (1996)	Livolsi (2019)	Total
1	Width of remedy		x				x				x		3
2	Immune from external influence							x					1
3	Confidentiality				x							X	2
4	Voluntariness	x	x		x		x						4
5	Liabilities to opponent's cost	x	x	x			x		x		x		6
6	Consensus					x							1
7	Fairness					x							1
8	Enforceability					x							1
9	Binding nature							x					1
10	Transparency of judgments							x					1
11	Independency				x		x		x				3
12	Flexibility										x		1
13	Formality	x			x						x		3
14	Addressing power imbalance		x	x	x								3
15	Speed	x	x	x			x		x		x	X	7
16	Improves communication	x	x		x		x				x		5
17	Impartiality	x		x					x				3
18	Cost reduction	x	x				x			x	x	X	6
19	Wide range of issues							x					1
20	Control by parties						x						1
21	Control by neutral	x	x				x		x		x		5
22	Preservation of relationships	x		x									2
23	Possibility to reject neutral							x					1
24	Ability to appeal	x			x							X	3
25	Ease of implementation	x	x				x					X	4
26	Effective case management							x				X	2
27	Credibility							x					1
28	Knowledge in construction							x					1

29	Experience in construction							x						1
30	Professional behaviour							x						1
31	Neutrality							x					X	2
32	Creative agreement					x								1
33	Sustainability												X	1
34	Ability to select place and language of the arbitration												X	1
	Total	11	9	5	7	4	10	11	5	1	8			

Adapted from Ilter and Dikbas (2008)

Osuizugbo and Okuntade (2020) put it that stakeholders need to be convinced that the chosen conflict management mechanism is fair and in their best interest for it to really take place and be successful. Supporting the assertion, Idowu, Ogunbiyi and Hungbo (2015) stated that the ADR techniques which give satisfaction to disputants are most likely to be used in dispute resolutions. Kirim and Wanjohi (2019) in a research argued that decision on which ADR approach to use by parties to a construction dispute are anchored by their frame of mind, subjective norm and deemed behavioral control which are guided partly by their knowledge of Alternative Dispute Resolution (ADR) in existence. Suffice it to say, the lack of awareness of the existence and unfamiliarity on how the ADR techniques work can prevent the widespread implementation of such techniques (Idowu, et al., 2015, Osuizugbo and Okuntade, 2020). Idowu, et al. (2015) in their study recommended that strategies should be employed to increase awareness of other ADR methods not so familiar including their operational techniques in resolving construction disputes; such will encourage adoption in dispute resolution. According to Ilter and Dikbas (2008) and Osuizugbo and Okuntade (2020), lack of institutional framework hinders the acceptance of ADR in construction. However, Idowu et al. (2015) presented a case of the United States where ADR has been specifically prohibited in certain circumstances.

Methodology

This research adopted quantitative techniques in the data analyses. The data was obtained by the use of questionnaire distributed in Abuja, Kaduna and Kano Nigeria. These cities do undertake significant construction works in the country with relevant and experienced respondents. Respondents were derived from clients, contractors' and consultants' organisations comprising architects, quantity surveyors, engineers and builders. The questionnaire was administered through random sampling. The sample size for this research was derived using Cochran's formula for calculating sample size of an unknown population, i.e.

$$N_o = \frac{Z^2 PQ}{E^2}$$

Where N_o = required sample size, Z = selected critical value of desired confidence level (1.96 for 95% confidence, 1.6449 for 90% and 2.5758 for 99%), P = estimated proportion of an attribute that is present in the population (0.5 for 50-50, 0.3 for 70-30), Q = 1-p and E = desired level of precision (0.03, 0.05, 0.1 for 3%, 5%, 10%).

Using the above formula, a sample size of 323 was found. Therefore, adding an error factor, a total of 365 was administered.

Eleven ADR methods widely appearing in literature were the subject of the research. The questionnaire was structured into two sections. Section 'A' dealt with the demography of the respondents while Section 'B' addressed the main objectives of the research. Respondents were requested to assess the questions related to the 11 identified dispute management methods in a 5 points Likert scale. The score of 1 indicates less and 5 is a high score. The mean value of each method was computed. Four research questions were set as key area of focus as follows:

i. To what extent do respondents understand the identified ADR methods?
ii. To what extent do each ADR method preferred as a construction dispute resolution technique?
iii. To what extent is each of the ADR methods commonly employed in construction dispute management?
iv. How do (i)-(iii) relate?

Descriptive statistics (mean score) was ranked and the most understood, most preferred and the most commonly used methods identified. Using "t" distribution, the p-value established the significance of each rating which formed the bases of conclusions. As an example, the research enquired if the level of understanding of the identified ADR methods by respondents is significant or not? To achieve this, a 2-tailed "t" test was conducted. It is to find out to reject or accept that:

- H_0: There is no statistical significant understanding of each ADR method by respondents.
- H_1: There is statistical significant understanding of each ADR method by respondents.
- A critical test value of 3.5 was used to test the means.
- A 5% level of significance was adopted, which means that where the p-value is less than 0.05 we reject H_0.

The test value of 3.5 is the mean of 3.0 and 4.0. In a 5-point Liker's scale used in this research, 2.0 refers to less understood, 3.0 is neutral or undecided while 4.0 refers to understood. Between neutral and understood is a value 3.5 which is the average of 3 and 4. This is a more stringent value to establish the level of significance of the understanding. The same approach was applied to the other research inquests (level of use and preference of methods). Finally, Spearman's Correlation was used to compare the understanding, preference of method or choice and extent of use. This is an attempt to establish if one aspect influences another and to what extent.

Results

Socio-economic characteristics of respondents

Respondents were randomly derived from both the client's, the consultant's and the contractor's organisations comprising different professional backgrounds. The researchers distributed 365 questionnaires and a total of 267 retrieved and sorted. A total of 258 were found fit and used for the analysis which is 79.62% of the total distribution. The years of experience and the positions of respondents in their organisations are depicted in Table 3. Most respondents are experienced construction practitioners as only 18.60% have served within 5 years and below. Those that have served above 10years cumulatively are about 52.72%.

Regards the positions held, 11 (4.26%) did not respond to this particular question. The top, middle and lower managers were 215 altogether which is 104 (40.31%), 89 (34.50%) and 22(8.53%) respectively. Cumulatively, 74.81% were either top or mid management personnel, and still 8.53% were lower managers. The positions tend to match rightly the years of experience of respondents. This research can rely on the responses for analyses since they are qualified and most of them experienced construction practitioners.

Table 3: Demography of respondents

Years of experience	1- 5 yrs	48	18.60%
	6-10 yrs	74	28.68%
	11-15 yrs	21	8.14%
	16-20 yrs	93	36.05%
	21 yrs and above	22	8.53%
	Total	**258**	**100%**
Position of respondent	No respond	11	4.26%
	Top management	104	40.31%
	Middle management	89	34.50%
	Lower management	22	8.53%
	Not in management level	32	12.40%
	Total	**258**	**100%**

Source: field work (2022)

The degree of understanding of ADR in the industry

This section establishes the degree of understanding of ADR methods in the construction sector. Previous researches established that understanding the various ADR methods enhances acceptance and implementation (Idowu, Ogunbiyi and Hungbo, 2015, Osuizugbo and Okuntade, 2020). In this research, respondents were requested to rate their degree of understanding of the identified ADR methods. The result of the analysis is reported in Table 4. The mean values of the methods were ranked in the order of most understood. The higher the mean values the higher the level of understanding of the ADR method among respondents.

Four best understood ADR methods in the construction sector as ranked in Table 4, which are arbitration (3.19), conciliation (2.96), negotiations (2.93) and mediation (2.83), they were ranked 1st, 2nd, 3rd and 4th respectively. Three least understood methods ranked 11th, 10th and 9th are early neutral evaluation (ENE) (2.21), fact finding (2.30), in-court annexed arbitration (2.30) respectively. To know the understanding of a particular ADR method by respondents is at a significant level or not, the mean values ranked for statistical significance were computed.

The second far right column in Table 4 indicates the p-values of the "t" test. All the p-values are less than 0.05 which is within the rejection region of the null hypothesis. The null hypothesis that there is no statistical significant understanding is rejected. Instead we accept the alternate that there is statistical significant understanding of the ADR methods among practitioners. It means that there is sufficient reason to conclude that practitioners have sufficient knowledge and understanding of all the ADR methods in question. This result is despite the stringent test value of 3.5 instead of less stringent value of 3.0. The researcher adopted a more stringent level because of the belief that it is only through proper, yet high level of understanding that any ADR method applied in construction dispute can succeed.

Table 4: Level of understanding of ADR methods in the construction industry

	ADR methods	Test Value = 3.5					
		N	Mean	Std. Deviation	Ranking	Sig. (2-tailed)	Remarks
1	Negotiations	258	2.93	1.302	3	.000	Reject
2	Mediation	258	2.83	.990	4	.000	Reject
3	Conciliation	258	2.96	1.250	2	.000	Reject
4	Adjudication	258	2.62	1.107	5	.000	Reject
5	Arbitration	258	3.19	1.439	1	.001	Reject
6	Facilitation	258	2.60	1.102	6	.000	Reject
7	In-court annexed arbitration	258	2.27	1.188	9	.000	Reject
8	Appellate ADR	258	2.34	1.073	8	.000	Reject
9	Early neutral evaluation (ENE)	258	2.21	1.031	11	.000	Reject
10	Fact finding	258	2.27	1.233	10	.000	Reject
11	Judge hosted settlement conference	258	2.43	1.368	7	.000	Reject

Source: Field survey (2022)

Suitability of ADR methods to the construction industry

Respondents were requested to rate the ADR methods most suitable in resolving dispute in the construction sector based on the general knowledge and understanding of the identified methods. Table 5 reports the suitability of the diverse ADR methods in managing construction disputes. The highest ranked is arbitration which ranked 1st with 3.41 mean value. It means, most respondents feel that arbitration is most suitable in managing construction disputes than other ADR methods.

The next highest ranked is Mediation (3.30), followed by Negotiations (3.08) and then Facilitation (3.05). Four least suitable methods to the industry in that order are Early neutral evaluation (ENE) (2.60) ranked 8th, Fact finding (2.60) ranked 9th, and then judge hosted settlement conference (2.43) and In-court annexed arbitration (2.43) both ranked 10th.

Literature often discourages the use of arbitration as not a good ADR method for the industry because of its closeness to litigation when compared to others. It has adversarial tendency, long time in dispute resolution and high costs comparatively. Therefore, it is expected that other methods should rank better than arbitration on this case. This research did not inquire what influences the ranking of methods which is outside the scope. Notwithstanding, the high understanding among respondents as established earlier might have some influence. Further scientific inquests might be necessary especially that earlier finding in this work shows that practitioners understand all the ADR methods at a significant level.

The level of significance of the suitability was also enquired. Having depicted the level of suitability of each method through the mean values, how significant is the suitability of each method was analyzed. Table 5 depicts the p-values of the ADR methods which indicate all of them to be less than 0.05 except arbitration. The values below 0.05 indicate that we reject the null hypothesis and accept that the level of suitability to the industry is significant. However, while expecting the level of suitability of arbitration to be statistically significant also, it conversely shows that it is not significant. It is concluded that despite high understanding; respondents never intend to rate arbitration more suitable than others.

Table 5 Suitability of ADR methods to construction industry

	ADR	Test Value = 3.5					
		N	Mean	Ranking	Std. Deviation	Sig. (2-tailed)	
1	Negotiations	258	3.08	3	1.189	.000	Reject
2	Mediation	258	3.30	2	1.003	.002	Reject
3	Conciliation	258	3.00	6	1.165	.000	Reject
4	Adjudication	258	3.03	5	1.112	.000	Reject
5	Arbitration	258	3.41	1	1.239	.270	Accept
6	Facilitation	258	3.05	4	1.343	.000	Reject
7	In-court annexed arbitration	258	2.43	10	1.221	.000	Reject
8	Appellate ADR	258	2.73	7	.947	.000	Reject
9	Early neutral evaluation (ENE)	258	2.60	8	1.109	.000	Reject
10	Fact finding	258	2.60	9	1.281	.000	Reject
11	Judge hosted settlement conference	258	2.43	11	1.351	.000	Reject

Source: field survey (2022)

Level of usage of ADR methods in resolving dispute in the construction industry

This section enquired to know which of the ADR methods are widely used in the sector. Respondents were requested to assess the level at which the identified ADR methods are used in the construction sector. The result of the analysis is shown in Table 6.

Table 6 reveals the four most widely used ADR methods for dispute management in the construction sector as Arbitration (3.18), Facilitation (3.13), Mediation (3.10) and Negotiations (3.08) which are ranked 1st, 2nd, 3rd and 4th respectively. The four least used are Judge hosted settlement conference (2.24), Early neutral evaluation (ENE) (2.38), In-court annexed arbitration (2.41) and then Fact finding (2.53) which were ranked 11th, 10th, 9th and 8th positions respectively. On the general note, the table reveals that all the ADR methods are used in the construction sector for dispute management at a significant level. All the p-values in the second far right column of Table 6 are less than 0.05 which denotes a rejection of the null hypothesis. Accept the alternate hypothesis that all methods are used at a statistically significant level.

Pearson's Product Moment Correlation

Table 7 depicts the correlation between the understanding, suitability and usage of ADR methods in the construction sector. It is an attempt to find out if one aspect affects another. A correlation is a number between -1 and +1 that depicts a measure of the degree of association between two variables. A positive value implies positive influence of one on another, while a negative value implies a negative or inverse influence and a value of zero (0) indicates no influence.

Table 6: Level at which ADR methods are used in the Construction Sector

		Test Value = 3.5					
	ADR methods	N	Mean	Std. Deviation	Ranking	Sig. (2-tailed)	Remarks
1	Negotiations	253	3.08	1.287	4	.000	Reject
2	Mediation	258	3.10	1.071	3	.000	Reject
3	Conciliation	258	2.84	1.237	7	.000	Reject
4	Adjudication	258	2.87	1.056	6	.000	Reject
5	Arbitration	258	3.18	1.206	1	.000	Reject
6	Facilitation	258	3.13	1.331	2	.000	Reject
7	In-court annexed arbitration	258	2.41	1.109	9	.000	Reject
8	Appellate ADR	258	2.92	1.113	5	.000	Reject
9	Early neutral evaluation (ENE)	258	2.38	1.214	10	.000	Reject
10	Fact finding	258	2.53	1.279	8	.000	Reject
11	Judge hosted settlement conference	258	2.24	1.416	11	.000	Reject

Source: Field survey (2022)

Table 7: Correlation between understanding, suitability and used of ADR methods

		Most understood	Most suitable	Widely used
Most understood	Pearson Correlation	1	.437**	.434**
	Sig. (2-tailed)		.002	.002
	N	47	47	47
Most suitable	Pearson Correlation	.437**	1	.629**
	Sig. (2-tailed)	.002		.000
	N	47	47	47
Widely used	Pearson Correlation	.434**	.629**	1
	Sig. (2-tailed)	.002	.000	
	N	47	47	47

**. Correlation is significant at the 0.05 level (2-tailed).*
***. Correlation is significant at the 0.01 level (2-tailed).*
Source: Field survey (2022)

Table 7 shows that, there is a positive correlation value of 0.437 between the understanding and the suitability of ADR methods. The p-value is 0.002 showing that the correlation is significant at 0.01level of significance. Likewise, the correlation value between the most understood and the widely used method in the industry is 0.434 with p-value of 0.002. It is also indicating that the correlation is significant at 0.01, level of significance. The correlation is stronger and significant at the same level of significance between the methods viewed as most suitable and the one widely used in the industry, having a correlation value of 0.629.

Discussions

Out of eleven ADR methods identified, the first four most understood by respondents include arbitration, conciliation, negotiations and mediation in that order. On further inquisition, the other nine methods were also found to be understood at a significant level. This research therefore, concludes that there is a significant level of understanding of the 11 ADR methods among construction experts in Nigeria. This finding is rather not startling by virtue of the quality of respondents in terms of educational levels and years of experience. The quality of respondents is high- most of them having obtained higher degrees with long and relevant work experience; most being within managerial levels in their organisations. There's therefore that possibility of a response leaning towards significant understanding of ADR methods. Notwithstanding, the finding is at variance with what most researchers have established in Nigeria. For example, Idowu, Ogunbiyi & Hungbo (2015) and Osuizugbo & Okuntade (2020) found poor awareness of the existence and unfamiliarity as main reasons for limited use of most methods. When the respondents in this research were asked about the most suitable method to resolve dispute in the industry, similar pattern to understanding was maintained and arbitration again ranked highest. This finding is also against literature position which describes arbitration as being closer to litigation compared to others, as such, not a suitable method for optimum construction dispute management. This research never enquired to know the key reasons a method is considered suitable or unsuitable. Three next most suitable methods are mediation, negotiation and facilitation. Critical observation of the results suggests that the suitability pattern ranked seems to be influenced by the general understanding of the methods. The most understood methods seem to be the most suitably ranked. For example, arbitration is the most understood method followed by conciliation, negotiation and mediation. This is closely related to those found to be the most suitable methods. However, further enquiry shows that the level of suitability of arbitration is not significant leaving the other three (mediation, negotiation and facilitation) as

the most suitable. The rejection of arbitration as a suitable method for dispute resolution is in line with literature. This information should help in guiding future contract drafts to adopt systems most favoured by practitioners.

Despite that arbitration is rejected as a suitable method in dispute resolution, the research found that it is still the most used ADR method in Nigeria unlike in other countries (Trangkanont, 2017, El-Sayegh et al., 2020) and Nigeria (Idowu et al., 2015). Other methods ranked among the first four most used are facilitation, mediation and negotiation. The entire eleven identified ADR methods are found to be applied at a significant level. Table 8 compares the highest ranked methods in each of the research questions. For example, arbitration is ranked 1st in all three cases except that the suitability is not significant. Conciliation is ranked the 2nd most understood but not found among the highest ranked in suitability and usage. Negotiation is 3rd most understood, 3rd most suitable and 4th most used method.

A strong, positive and significant correlation was found between the ADR methods viewed as most suitable and the most used in the industry in line with findings by Kirmi and wanjobi (2019). It implies that the methods viewed as most suitable are the same methods most likely to be used in dispute resolution. This establishes a strong case that if stakeholders perceive a method as suitable, the same method will be widely employed for dispute resolution. The implication of this finding is that if deliberate effort is put into creating a positive mindset among practitioners on the suitability of less adversarial methods, it will significantly increase its use in resolving dispute. At present, the ADR methods ranked highest as being used are those that literature adjudged as comparatively more adversarial, costly and take longer time to manage disputes such as arbitration. These are the same methods viewed as suitable for the construction sector. This might have contributed to the poor performance of dispute management in the Nigerian construction sector. Both factor of understanding, suitability and usage of methods showed positive significant inter-correlation and influencing each other significantly and positively.

Conclusion

Stakeholders in the construction industry understand the varying ADR methods identified. There is an established positive relationship between the methods well understood and the methods stakeholders viewed as suitable for dispute resolution which also influences the extent of application of such methods.

This research was set to evaluate various ADR methods in view to improving the performance of construction dispute management. In doing so, the research enquired to find out to what extent construction practitioners understand ADR methods in existence as a prerequisite to the choice and usage of methods. The research found that:

Table 8: Highest ranked ADR methods

	ADR Methods	Most understood Ranked	Most suitably Ranked	Most used Ranked
1	Arbitration	1(Significant)	1 (Not Significant)	1(Significant)
2	Conciliation	2(Significant)	-	-
3	Negotiation	3(Significant)	3(Significant)	4(Significant)
4	Mediation	4(Significant)	2(Significant)	3(Significant)
5	Facilitation	-	4(Significant)	2(Significant)

Source: Field survey (2022)

1. There is a statistical significance in the level of understanding of the ADR methods identified in this work by construction stakeholder.
2. There is a general agreement that the identified methods in this research are suitable for ADR objectives except arbitration which is less suitable.
3. The ADR methods are found to be applied in dispute resolution at different levels, and those closer to litigation such as arbitration being the most widely used in resolving construction disputes
4. There's strong positive correlation between the methods understanding, suitability and usage of ADR methods and influence each other significantly.

Managers of construction dispute should ensure preliminary assessment of the level of confidence and trust disputants bestow on a particular ADR method, and also obtain their affirmation on the willingness to submit to it before applying it in alternative dispute resolution. This should be in contrast to the tradition of insisting on arbitration often inserted in the contract conditions. Disputants must be assessed if they understand the mechanism and implication of the method to adopt and if willing to submit to it. The mindset of practitioners generally in the industry should change for a more positive view on the friendlier ADR methods.

Most of these findings in this work are at variance with literature and what other researchers have established in the past. This therefore raises more questions than answers which generates the need for more research inquests in the field of ADR methods in Nigeria to reestablish some research conclusions.

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