

Disputes and their Resolution in Major Infrastructure Projects in Developing Countries: Literature Review

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Abstract — The construction industry is highly fragmented with complex processes that require the coordinated effort of a temporarily assembled multi-member organisation of many groups, each having different goals and needs, and each expecting to maximise its benefits. One of the problems of these conflicting goals concerns construction disputes. In light of this, this paper aims to review existing literature on disputes in major infrastructure projects in developing countries and look at developed countries to see how disputes are resolved. This study adopts the systematic review process as a methodological approach. A total of 292 articles from 43 construction-related journals were identified and reviewed. Among these, only 170 articles focused on disputes and disputes resolution which were then analysed, synthesised, and summarised to cover both developed and developing countries. The study found that ‘a dispute does not exist until a claim has been submitted and rejected; a claim being a request for compensation for damages incurred by any party to a contract’. The disputatious nature of the construction industry is not peculiar to the developing countries alone but also affects developed countries across the globe. On dispute resolution in construction, the study found from two perspectives of developing and developed countries that the same dispute resolution methods are adopted, i.e. binding and non-binding methods. The study highlights the actual state of research into construction dispute resolution methods in developing and developed countries.

Keywords: Conflict, Claims, Dispute resolution, Developing countries.

I. INTRODUCTION

The construction industry is a branch of manufacture and trade based on building, maintaining and repairing structures. And construction is a complex process that requires the coordinated effort of a temporarily assembled multi-member organisation of many discrete groups, each having different goals and needs [1], [2], [3] and [4]. Because of the differences in perception and frequency of conflicting goals among partners to a project, conflicts are, therefore, inevitable [3].

The definition of dispute is itself a matter of dispute as a plethora of definitions as to what constitutes a dispute can be found in the normative literature [5]. Several authors submitted that the terms dispute, conflict and claim are often used interchangeably, but their meanings are very different [6], [7], [8] and [9]. But there is a closer inter-relationship between claim and dispute [10]. On the other hand, dispute resolution refers to a number of processes that can be used to resolve disputes. It is a very important task in the construction industry because huge sums invested in projects and unresolved disputes can lead to projects being brought to a halt [11]. From literature, construction disputes are resolved by traditional techniques of litigation and arbitration, and alternative dispute resolution (ADR) methods which include mediation, conciliation, negotiation, arbitration, dispute resolution board (DRB), dispute resolution adviser (DRA) and mini-trial [11].

Many articles with a variety of topics on construction disputes and their resolution have been published. Given the fact that the facet of this review focuses on disputes and their resolution in major infrastructure projects in developing countries, the objectives of this paper are:

1. To conduct a thorough literature review for previous studies in disputes and dispute resolutions in major infrastructure projects in developing countries. This review will also look at processes in the developed countries to find out if the disputatious nature of the construction industry is peculiar to developing countries alone or countries across the globe;
2. To discover the general trend of disputes and dispute resolution related studies through a systematic review. The analysis will cover year profile of publication (1981 - 2018; years inclusive) and publications distribution by countries and continents (developed and developing countries);
3. To produce a report to broaden the understanding of researchers and industry practitioners of legal submission of when it can be said that there is a dispute in construction and

the different dispute resolution methods adopted to resolve construction disputes in different countries based on the results obtained from items 1 and 2 above. This review will also contribute to the body of knowledge about global construction disputes and their resolution.

II. RESEARCH METHODOLOGY

To achieve objectives 1 and 2, a systematic review of the literature is conducted of previous studies that relates to dispute and their resolution in major infrastructure projects in developed countries. The review was restricted to relevant papers that have been published in academic (peer-reviewed) journals. The rationale for this is that peer-reviewed journal papers are considered the most valuable sources of information, because of the academic rigor involved in their publications. The review also included developed countries to find if the disputatious nature and resolution methods are same globally. The process, as identified in [12], [13], [14], [15], [16] and [17], involves a specific and reproducible approach for identifying, selecting and appraising all literature of a certain agreed level of quality that are relevant to a research question.

A. Data collection

1) *Literature search:* In this step, research questions was addressed unambiguously and in specified order. The research question, therefore, was: ‘What is disputes and their resolution in the construction industry?’ With this, the search protocol was then solely based on the following designated search keywords as identified below, to assure the criteria are maintained at a well-defined range:

“Construction industry”, “Disputes”, “Claims”, “Disputes in construction”, “Dispute resolution in construction”, “Dispute resolution methods”, “Construction dispute resolution in developing countries”, “Construction dispute resolution in developed countries”.

2) *Literature selection:* A comprehensive and extensive search from relevant databases was carried out to capture as many relevant citations and journals in the appropriate domain of study identified and selected, as opined by [14]. The journals selected were listed in some of the well-known database providers, multidisciplinary and global coverage and focused on construction disputes and their resolution. The databases include Taylor & Francis Group, Emerald Insight, Science Direct, Elsevier, EBSCOhost, IEEE Xplore, International Institute for Science, Technology and Education (IISTE), International Publisher for Advanced Scientific Journals (IPASJ) and American Society of Civil Engineers (ASCE). The databases involve the main peer-referred journals in the topic of disputes and dispute resolution in construction industry. Open Access journals were also reviewed because articles are freely available for everyone and articles from developing countries are published in journals more on open access. A total of 43 journals were selected from the ten databases with 292 papers identified.

3) *Assess the quality of studies:* This step is to ensure academic rigor and implies that acquired articles for analysis and synthesise are subjected to assessed qualities. This meant the initial 292 papers retrieved were subjected to a screening

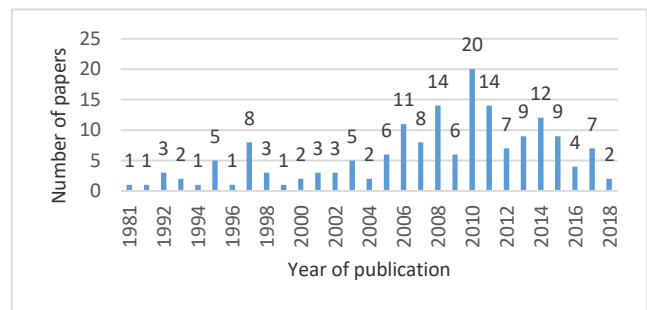
process which that involved reviewing of the abstracts and contents of the 292 papers, and those identified as relevant to the review were selected and reviewed in full. The numbers of papers that relate to disputes and dispute resolutions in the construction industry were reduced to 170 papers.

B. Data analysis of the screened articles

The data analysis was conducted to analyse and synthesise the remaining 170 screened articles, focusing on articles which are only related to the topic of interest and aligned with the research scope. The analysis covered year of publication (to identify increase of interest in dispute resolution) and publication distribution by countries and continents (as a comparative studies of publications across countries and continents).

1) *Year profile of publication:* In the selected 170 papers, the earliest one concerning disputes and dispute resolution in the construction industry was published in Law and Society Review in 1981. The number of paper increased in 1997 (8 papers), in 2008 (14 papers) but the number peaked at 20 in 2010. The number of papers was maintained at 12 in 2014 before a sharp decrease in papers (see figure 1).

Figure 1 Year profile of publication (till 2018)



2) *Publications distribution by countries and continents:* [18], in their paper, analysed country/region distribution based on authors or institutions. But this review focused on where each study was implemented. Papers that did not involve specific countries, classified as ‘General’, were excluded from the analysis of countries distribution. Some papers did not involve specific countries. These were classified as ‘General’ and were excluded only from the analysis of countries distribution. As identified in Figure 2, a total of 26 countries or five (5) continents were covered in the selected papers. In terms of country, (20%, 30 publications) of the papers were conducted in the United States of America. Other notable countries or regions with significant number of papers are United Kingdom (13.3%, 20 publications), Hong Kong (11.3%, 17 publications), Nigeria (8%, 12 publications), Malaysia (6.7%, 10 publications), Australia (4.7%, 9 publications), China (5.3%, 8 publications), while Canada and Egypt, each (3.3%, 5 publications); Ghana and India each (2.7%, 4 publications). As a continent, Asia had 55 publications (36.7%), followed by North America (35 publications, 23.3%), Europe (25 publications, 16.7%) Africa (24 publications, 16%) and Australia (11 publications, 7.3%).

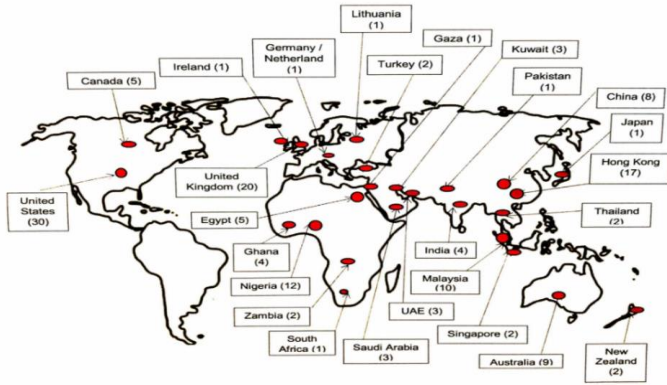


Figure 2 The number of publications distributed by countries and continents

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III. DISCUSSION OF RESULTS

This section discusses the findings of the literature search. It is identified that because of the interchangeable use of the term ‘conflict’, ‘claim’ and ‘dispute’, their defined meaning are different from meaning that the word or phrase have in ordinary usage. That is, these terms carry emotive meanings when used in an industry context but when used in legal context, they are used with precision and devoid of emotional connotations.

A. Construction disputes

[19] and [5] opine that dispute starts from unresolved conflict or grievances; grievance being an individual’s belief of entitlement to a resource that someone else wants to deny. The progression of the individual’s belief leads to a claim being registered which can be accepted or rejected by the other individual. The rejection by either individual, therefore, establishes a dispute. From the legal context, for something to be called dispute in construction, there must be a contract in writing (construction contract) between the parties and there must be two people that see a problem [19]. From analysis by [20], the legal arguments submitted passed the three separate tests of a dispute decision by Court of Appeal in the Halki case (Halki Shipping Corporation v Sopex Oils Ltd, [1998], 1 WLR CA) in that:

- There is a dispute once money is claimed unless and until it is paid;
- There is a dispute if a party refuses to pay a sum which is claimed is owing; and
- There is a dispute if a party denies that a sum claimed is owing.

[10] summarised that ‘a dispute does not exist until a claim has been submitted and rejected; a claim being a request for compensation for damages incurred by any party to a

contract’. [21] opines that in *Ellerine Brothers (Pty) Limited and Another v. Klinger* [1982] W.L.R. 1375; *Fastrack Contractors Limited v. Morrison Construction Limited* [2000] BLR168, para 28; *Tradax International v. Cerrahogullari TAS* [1981] 3 All ER 344, the decision was that a dispute arises only after it emerges that a claim is not admitted. In two recent decisions in *Gibson (Banbridge) Limited v. Fermanagh District Council* [2013] NIQB 16 and *City Basements Ltd v. Nordic Construction UK Ltd QBD (TCC) 14 April 2014* (Unreported), the courts held that failure to admit or deny a claim for payment within a reasonable time gave rise to inference of non-admission and consequently, the existence of disputes.

B. Construction dispute resolution methods

This review established that the disputatious nature of construction is not peculiar only to one country but universal. The topic of dispute resolution in the construction industry has, therefore, attracted wide attention. This review viewed resolution of construction disputes from two perspectives: developing and developed countries. This study did not see differences between these two perspectives regarding methods adopted to resolve disputes in construction industry in different countries (Tables 1 and 2). The different methods of dispute resolution in construction identified include binding (traditional) methods i.e. Arbitration and Litigation, and non-binding (Alternative Dispute Resolution (ADR)) methods i.e. Negotiation, Mediation / Conciliation, Adjudication (could also be classified as binding), Expert Witness, Dispute Review Boards (DRBs). Though these binding and non-binding methods are also applicable in construction in developing countries, litigation and arbitration are still popular in resolving construction disputes despite their shortcomings (e.g. costs, time, and effect on relationships). This is because alternative dispute resolution (ADR) methods are yet to gain common acceptance [22], [23] and [11]. Tables 1 and 2 showed lists of studies on dispute resolution methods in selected developing and developed countries from the literature review.

From the information provided in the two tables below, it can be seen that different studies by different authors identified that same method of dispute resolution applies in nearly every country, be it developing or developed countries.

Table 1 List of studies on dispute resolution methods in selected developing countries (Literature review)			
	Authors	Country	Dispute Resolution Method
1	Elziny, A. A., Mohamadien, M. A; Ibrahim, H. M and Fattah, M. K.A. (2014)	Egypt	- Negotiation - Mediation - Arbitration - Litigation
2	Charehzehi, A. and Ahankoo, A. (2013)	Malaysia	- Conciliation - Negotiation - Mediation - Arbitration - Litigation
3	Idowu, F. O., Ogunbiyi, O. E. and Hungbo, A. A. (2015)	Nigeria	- Negotiation - Mediation - Mini-trial - Arbitration - Adjudication - Litigation
4	Alsharani, S. (2017)	Saudi Arabia	- ADR: Negotiation - Mediation

Table 1 List of studies on dispute resolution methods in selected developing countries (Literature review)			
	Authors	Country	Dispute Resolution Method
			DAB Arbitration - Traditional method: Litigation
5	Bvumbwe, C. and Thwala, D. W. (2011)	South Africa	- Negotiation -
6	Musonda, H. M. and Muya, M. (2011)	Zambia	- Informal: Negotiation Mediation Conciliation Adjudication DRB - Formal: Arbitration Litigation

Table 2 List of studies on dispute resolution methods in selected developed countries (Literature review)			
	Authors	Country	Dispute Resolution Method
1	Kassab, M., Hipel, K. and Hegazy, T. (2006)	Canada	Escalation method steps - Negotiation - Mediation - Partnering - DRBs - Arbitration - Mini-trial - Litigation
2	Cheung, S. O., Suen, H. C. H. and Lam, T. I. (2002)	Hong Kong	- Litigation - Arbitration - ADR: Conciliation Mediation Adjudication Hybrid process: Mediation as integral part
3	Iwamatsu, J., Akiyama, T. and Endo, K. (2008)	Japan	- Mediation (<i>assen</i>) - Conciliation (<i>shotel</i>) - Arbitration (<i>chusal</i>)
4	Mante, J., Ndekugri, I. Ankrah, N. and Hammond, F. (2012)	UK	From review of literature - Adjudication - Arbitration - Litigation
5	Taylor, J. M and Cam, W. (2010)	USA	- Litigation - Arbitration - Negotiation - Mediation - Dispute Review Boards
6	Gebken II, R. J. and Gibson, G. E. (2006)	USA	- ADR: Litigation Arbitration DRB Mini-trial - Binding: Litigation

But currently, some countries are developing and introducing new initiatives as means of avoiding disputes in the construction industry. In the developed countries, new initiatives are being introduced. For example, in the United Kingdom, after the aftermath of several reports [24], [25], several innovative collaborative working initiatives have been developed such as partnering, integrated project delivery, project alliancing, lean construction and relational contracting [26], [27], [28]. And in Sweden, better communication [29], and communication “up, down and sideways” [30] put forth to speed innovation and productivity. In Canada, the emphasis is on dispute avoidance e.g. partnering. In Italy, the new mechanism is strictly enforced monthly notice provision for claims in relation to construction projects. In Netherland, judges often refer the parties in dispute back to the negotiation

table. In USA, the use of ADR techniques, e.g. arbitration is now prevalent.

On the other hand, in the developing countries, disputes arising from transactions within a State fall within the jurisdiction of the national courts [31]. However, the involvement of foreign participants in international transactions within developing countries has changed the dynamics of this principle. This led to the choice of dispute resolution methods within the legal framework of the national legislation and applicable international protocols and conventions i.e. Convention on the Recognition and Enforcement of Arbitral Awards (New York Convention) and modelled on the United Nations Commission on International Trade Law (UNCITRAL) Model Law; which covers any contracting arising out of International Commercial Arbitration (ICA) [11].

IV. CONCLUSIONS

The main purpose of this study is to carry out a literature review of disputes and their resolution in major infrastructure projects in developing countries. To achieve this, this study has conducted systematic review of articles published in 43 selected academic (peer-reviewed) construction project-related journals. A systematic screening process has been performed on all disputes and dispute resolution in construction related articles based on review of the abstracts and contents, with the aim to synthesise the definition of construction disputes and dispute resolution methods. The analysis covered publications between 1981 and 2018 (years inclusive). The overall trend showed that the importance of disputes and dispute resolution in construction has been growing consistently in decades.

The review showed that the term ‘conflict’, ‘claim’, and ‘dispute’ are used interchangeably but their defined meaning are different when used in industry context from when used in legal context. The simple legal context summarised that ‘a dispute does not exist until a claim has been submitted and rejected; a claim being a request for compensation for damages incurred by any party to a contract’. The review also revealed that the disputatious nature of construction is not peculiar to one country only but universal. The review viewed resolution of construction disputes from two perspectives: developing and developed countries. The study found no differences between these two perspectives in terms of dispute resolution methods in different countries i.e. binding (traditional) and non-binding (ADR) methods.

Some developed countries are developing and introducing new initiatives as means of avoiding disputes in the construction industry. Different initiatives introduced by different countries include collaborative working such as partnering (project alliancing and lean construction), communication ‘up, down and sideways’, dispute avoidance (partnering), and use of ADR techniques. But in developing countries, because of the foreign participants’ involvement in infrastructure projects, the choice of dispute resolution methods has been application of international protocols and conventions i.e. Convention on the Recognition and Enforcement of Arbitral Awards (New York Convention) and modelled on the United Nations Commission on International Trade Law (UNCITRAL) Model Law, which covers any

contracting arising out of International Commercial Arbitration (ICA).

From the literature review, the methods adopted for the procurement of the infrastructure projects in different countries have not been considered in arriving at the different dispute resolution methods.

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