



Selection and use of Alternative Dispute Resolution (ADR) in construction projects — Past and future research

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Abstract

Research on Alternative Dispute Resolution (ADR) selection and use has been gaining prevalent interest from project practitioners and researchers. This study presents a systematic review of the factors influencing ADR selection and use in construction projects for the last 32 years. A total of 446 articles from 21 construction project-related journals were identified and reviewed. Among these, only 13 articles focused on the factors influencing ADR selection and use. These 13 articles were then analysed, synthesized, and summarized in terms of the *research methods used*, *distribution across countries* and *citation influences*. The studies on the selection and use of ADR were mainly based on utility. Utility factors offer less conceptual basis to explain decision making. To address this deficiency, this study reclassified ADR selection and use with reference to Theory of Planned Behaviour (TPB) based framework. The potential development and research avenues of using the TPB framework were also discussed.

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1. Introduction

Conflicts are common in project based organizations, however it would escalate into disputes if not managed properly (Lu et al., 2015). When disputes are inevitable, project managers nevertheless need to handle and resolve them through various resolution processes (Cheung, 1999). Alternative Dispute Resolution (ADR) techniques have gained popularity as means to manage conflicts and disputes. ADRs are incorporated in standard form of project contracts as designated means to avoid and resolve project disputes (Jannadia et al., 2000, Chong and Zin, 2010). Common types of ADR to resolve construction project disputes include *Arbitration* (El-Adaway et al., 2009), *Adjudication* (Uher and

Brand, 2005), *Negotiation* (Lu and Liu, 2014, Yiu and Lee, 2011, Murtoaro and Kujala, 2007), *Mediation* (Qu and Cheung, 2013), *Dispute Resolution Advisor System* (Cheung and Yeung, 1998), *Dispute Review Board* (Ndekugri et al., 2014), and *Mini Trial* (Stipanowich and Henderson, 1993). Literature of ADR has been growing over the last few decades for the novelty to both researchers and project practitioners.

To effectively promote and intervene the use of ADR in the construction industry, the factors influencing ADR selection and use need to be researched and fully understood. The investigation of the ADR selection and use factors would assist in decision making and offer practical guides for project practitioners (Chong and Zin, 2012). In response to this need, this study adopts systematic review techniques proposed by Khan et al. (2003), Ke et al. (2009), and Lu et al. (2014). Given the fact that the facet of the review only focus on ADR selection and use factors, the objectives of this paper are:

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1. To discover the general trend of dispute resolution related studies through a systematic review. The analysis shall cover *Time Span*, *Overall Journal Shares* and *Dispute Resolution Themes*.
2. To identify the factors influencing ADR selection and use. This section highlights *Research Methods*, *Citation Influences*, and *Distribution across Countries* pertaining to the reported studies.
3. To propose future research directions on ADR selection and use based on the results obtained from items 1 and 2 above.

2. Research methodology

To achieve objectives 1 and 2, a systematic review has been performed to provide evidence for synthesis (Tranfield et al., 2003). The overall systematic review process suggested by Khan et al. (2003), Ke et al. (2009), and Lu et al. (2014) is operationalized and presented in Fig. 1.

To start a systematic review, research questions need to be addressed unambiguously and specified order in *Step 1: Framing Questions for a Review* (Khan et al., 2003). Search keywords are required to be set in order to meet the requirements of study (Ke et al., 2009). To assure search range of the review, plural forms of search keywords are advisable (Lu et al., 2014). In *Step 2: Select Data Sources*, comprehensive and extensive search from relevant database and journals is required (Khan et al., 2003). Therefore, to capture as many relevant citations, journals in the appropriate domain of study need to be identified and selected (Lu et al., 2014). *Step 3: Perform Preliminary Search* involves preliminary search by using the search keywords within the defined specific domain of *Titles*, *Keywords*, and *Abstract*. These search keywords are inserted and entered into the identified and selected journal databases (Ke et al., 2009; Lu et al., 2014). The search needs to be rigorous, without any language restrictions, and subject to flow from the research questions as priori (Khan et al., 2003). Lu et al. (2014) and Ke et al. (2009) also suggested that this stage should use confined parameter search to ensure consistency. *Step 4 is: Assessing the Quality of Studies to ensure academic rigor* (Khan et al., 2003). This implies that acquired articles for analysis and synthesize should be subjected to assessed qualities. The qualities of the articles acquired from preliminary search need to be filtered. Understandably, preliminary search conducted in step 3 would yield broad spectrum of themes and mainstreams of articles. Therefore, visual examination of the content of the articles needs to be conducted (Ke et al., 2009). Next, In *Step 5: Summarizing the Evidence*, detailed review will be conducted to analyse and synthesize the remaining filtered articles, focusing on articles which are only related to topic of interests. It calls for extraction of articles which is aligned with research scope and foundation of the research (Lu et al., 2014). Normally, the data are summarized and synthesized in the form of tabulation by study characteristics, quality and effects of study. Statistical method may be used as appropriate (Khan et al., 2003). To achieve this, this step adopts synthesize outcomes done by Lu et al. (2014). This paper will first discuss generic research trends in the form of available *mainstreams (themes)*, *overall time span*, *overall journal shares* and followed separately by *research methods*,

distribution across countries and citation influences pertaining to the topic of interest. Finally, in *Step 6: Interpreting the Findings*, the data are synthesized and interpreted from the tabulation of the studies. Recommendations are made based on evidence of strength and weaknesses (Khan et al., 2003).

To achieve objective 3, the factors influencing ADR selection and use (the ‘factors’ hereafter) synthesized from systematic review must be first extracted and synthesized. The characteristics of the factors will be examined and clustered into their shared dimensions. Accordingly, any weaknesses and shortcomings identified in systematic review offers for potential research avenues by addressing research gap.

3. Results

3.1. Step 1: Framing Questions for a Review

Dispute resolution methods in the construction projects can be largely categorized into non-binding methods such as conciliation, executive tribunal, mediation, dispute review boards, dispute review advisors, mini-trials; while binding methods include adjudication, arbitration, expert determination, and litigation (Fenn et al., 1997, Cheung, 1999). In this study, the research question was: “What influences ADR selection and use?” With this, the search protocol was solely based on the following designated search keywords below to assure the criteria are maintained at a well-defined range:

“Dispute”, “Disputes”, “Dispute Resolution”, “Dispute Resolution Selection”, “Alternative Dispute Resolution”, “Alternative Dispute Resolution Selection”, “ADR”, “Alternative Dispute Resolution Adoption”, “Alternative Dispute Resolution Choice”, “Alternative Dispute Resolution Use”, “ADR Selection”, “ADR Adoption”, “ADR Choice”, “ADR Use”, “Mediation”, “Adjudication”, “Conciliation”, “Expert Determination”, “Mini Trials”, “Dispute Review Board”, “Dispute Review Advisors”, “Negotiation”, “Executive Tribunal”, “Med-Arb”, and “Litigation”.

3.2. Step 2: Select Data Source

The journals were selected within the domains of building, property, built environment, architectural, engineering, design & construction project management journals to which ADR falls within their scope. In addition, journals which were listed in well-known database provider such as Taylor Francis Group, Emerald Insight, Science Direct, Wiley Online Publisher, IEEE Xplore Digital Library; as well as professional institutions such as the American Society of Civil Engineers (ASCE), the International Project Management Association (IPMA), and Project Management Institute (PMI). In Taylor & Francis Group Publications database, careful selection of journals under the subject of “Built Environment” was done. Under this domain, both “building project management” and “construction management” themes were explored. The aim and scope of the journals under these themes were investigated and analysed. The journals that were potentially relevant to the research of dispute resolution included (1) *Architectural Engineering and*

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