

An examination of the ‘Rule of law’ and ‘Justice’ implications in Online Dispute Resolution in Construction Projects

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This paper examines the ‘rule of law’ and ‘justice’ implications of using Online Dispute Resolution (ODR) platforms as technology-mediated interfaces for small claim dispute resolution in construction projects. Data is obtained from a questionnaire survey of construction stakeholders, administered using direct non-random sampling of professional contacts with the authors. Data is analysed using SAS 9.4 (*SAS Institute, Cary, NC*) on a Windows 7 platform. Surprisingly, study findings do not suggest any ‘rule of law’ and ‘justice’ implications for small claim ODR. Tentatively, this conclusion supports wider use of ODR. The originality of the study is that although there is considerable academic and practitioner interest in various alternative forms of dispute resolution (ADR), both practitioner use and academic study of ODR remain sparse. Thus, this study serves as a foundation for further empirical exploration of ODR as a nascent component of ADR.

1. Introduction

Following concerted efforts by a number of national courts to transform from being proctors of litigation and adjudication to sponsors of settlement (Roberts, 2009) in recent years, Alternative Dispute Resolution (ADR) has emerged as a popular means to resolve both public and private disputes (Mulcahy, 2013; Storskrubb, 2016). More fully, ADR uses substitute non-litigation based procedures and processes to both resolve (Nelson, 2013) and prevent (Lorenzo-Hervé, 2012) disputes. Correspondingly, Spiess and Felding (2008) regard it as a combined conflict prevention and resolution tool. ADR processes and procedures may be non-state (private) or state sanctioned. When state sanctioned, ADR is institutionalised through court-connected or mandated use (Nabatchi, 2007; Pappas, 2015).

Within the extensive literature on ADR, it is generally accepted that uptake has been particularly strong in the construction industry. Hence we chose this industry, considering it as a form of operations spanning the design, building and maintenance of infrastructure (Parvan et al., 2015; Chileshe et al., 2016) required for economic productivity (Giang and Pheng, 2011), as the context for our study. According to the World Economic Forum (2016) the construction industry contributes approximately 6% of global Gross Domestic Product (GDP). Yet this contribution is hampered by prevalent disputes (Pang and Cheung, 2014). Arcadis (2015) suggests that in 2014, the average value of a global scale construction project dispute was approximately US\$53 million, with an average dispute resolution time of 13.2 months. Generally, claim-driven disputes arise in construction projects when differences arise between different stakeholders regarding the legitimacy or value of specific rights to remedy which one party seeks to assert.

Arguably, the prevalence of disputes within an industry of such strategic importance to the global economy justifies greater attention than the emerging literature (e.g. Lambeck and Lees, 2011; Nielsen and Powell, 2011; Cheung and Pang, 2012; Tam, 2017) has so far been able to provide, also taking into account studies concerned with ADR more generally (e.g. Zaneldin, 2006; Lee et al. 2016)..

Nelson (2013) argues that ADR is one of the most significant developments in the law over the last century, citing as evidence that various countries have provided legislative support and thereby set ADR on a statutory footing. Such legislative support is itself preceded by the Federal Arbitration Act of 1925 in the United States. More recent support has arisen with the Arbitration Act 1996 in the United Kingdom and Articles 203-218, 235- 238 and 239-243 of the Civil Procedure Code, 1992 Federal Law No. (11) of the United Arab Emirates. In the European Union, statutory provisions exist within Directive 2013/11/EU1 on Alternative Dispute Resolution for consumer disputes, which was brought into force across the entire EU on the 9th July 2015. The main effect of this directive is to obligate Member States to ensure that certified bodies exist within them, to provide ADR services across all facets of customer disputes.

While a number of countries have provided legislation to support ADR, the reality is that ADR still faces unintended institutional challenges. These challenges relate to ADR's form and usage procedures, its use in dispute prevention, the question of whether ADR is private or imposed by the state, the role of technology and finally, its industry contextualisation. It is within this context of unintended and unforeseen problems that can arise within ADR that this paper seeks to examine the 'rule of law' and 'justice' implications of using Online Dispute Resolution (ODR) platforms in particular, as technology-mediated interfaces for construction project dispute resolution. The paper undertakes this examination by 'explor[ing] territory' (Handfield and Melnyk, 1998, p. 324) in the area of 'the rule of law', justice, ADR and ODR. Thus, the research question is presented as:

What are the implications from a ‘rule of law’ and ‘justice’ perspective in using ODR platforms to adjudicate and resolve project claims disputes in the construction industry?

In section 2 we clarify how the context of the study relates to low value claims using ODR on construction projects. Section 3 then reviews literature on ADR, ODR and their relationship to the ‘rule of law’ and ‘justice’. Section 4 presents the research methodology, focusing on the more complex second and third research questions in particular. Section 5 analyses data and findings are then discussed in section 6. Conclusions are drawn in section 7.

2. The context

2.1 Low-value claims in construction projects

A significant proportion of disputes in construction operations are low-value, with home construction and renovation problems representing a major component of these claims (Pilarski, 2013). Zanelidin (2006) found that while the value of construction disputes can range up to US\$21,674,650, the majority are valued below US\$500,000. Nonetheless, some studies (e.g. Ison, 1972; Kosmin, 1975) maintain that low-value claims are sufficiently numerous as to be more costly for industry overall than high-value claims. Such arguments of course make assumptions about what constitutes a low-valued claim, and such assumptions are known to vary between legal jurisdictions. In England and Wales¹, small and low-valued claims are determined as property and monetary claims of approximate value below US\$32,350. In the UAE Federal court system, disputes with claimed values under approximately US\$273000 are dealt with by the Minor Circuit. On the other hand, in the DIFC², a ‘Freezone’ operating within the UAE, small claims are determined as not exceeding approximately US\$136,000. The European Union (EU)³ designates small claims as disputes valued similarly, up to approximately US\$217470.

General industry and legislative interest in small claims has led to a special means of dealing with them being incorporated within the legislative frameworks of countries including the United Kingdom⁴, the United Arab Emirates (specifically, the Emirate of Dubai)⁵, South Africa⁶ and Zimbabwe⁷. These legislative frameworks have been scrutinised in two particular two areas. The first of these relates to the key ‘rule of law’ principle, that “...means must be provided for resolving without

¹ Department of Justice, 2015; Civil Justice Council, 2015; p. 4; Civil Procedure Rules, 2015(Section 26:6).

² Under DIFC Law No. 10 of 2004 (Part 53) (the DIFC Court Law).

³ Under Council Regulation 861/2007.

⁴ Department of Justice, 2015; Civil Justice Council, 2015; p. 4; Civil Procedure Rules, 2015 - Section 26:6.

⁵ DIFC Law No. 10 of 2004, Part 53.

⁶ Small Claims Court Act 61 of 1984.

⁷ Small Claims Courts Act 7[12].

prohibitive cost or inordinate delay, bona fide civil disputes which the parties themselves are unable to resolve” (The Lord Bingham, 2007, p. 77). Hence, this principle relates to the legislative mechanism’s cost-effectiveness, such that the cost of adjudication and resolution of a small and low-valued claim should not normally exceed the value of those claims. On this cost-effectiveness issue, Woolf (1996) observes that the average cost of settling small and low-valued claims and disputes tends to be between 40% and 95% of their value. The second focus for scrutiny of legislative frameworks focused on small and of low-value claims, as highlighted by Vestal (1965) and Sarat (1976), relates to their ability to provide legal certainty; which is to say, final closure without fear of further litigation. Taking stock of both angles of scrutiny, we posit that ADR in the form of ODR may enable small and low-valued disputes to be resolved with finality and without prohibitive cost or inordinate delay.

2.2 Alternative Dispute Resolution (ADR) usage

While ADR has become popular in dispute prevention and resolution within construction projects (Harmon, 2003; Lee et al., 2016), a number of factors make its use particularly challenging. These include its form and usage procedures, its use in dispute prevention, the question of whether ADR is private or imposed by the state, the role of technology and finally, its industry contextualisation.

In terms of form and procedure, ADR can be categorised as either ‘rule-based’ or ‘non-rule-based’. Rule-based dispute resolution emphasises formal rules of procedure that all parties involved have to follow (Brewster, 2006). In effect, “if A happens or comes to light, then do B”. This may cover aspects of the procedure relating to presentation of evidence, how to respond when third parties offer opinions or communicate information about a dispute to the disputants, the place of the resolution process, and the residual enforcement implications of dispute outcomes. Examples of ‘rule-based’ forms of dispute resolution make provision for recourse to Ombudsman services (Gadlin, 2000), arbitration (Tanielian, 2012), adjudication (Jayasinghe and Ramachandra, 2015) and litigation (Goetz and Gibson, 2008; Brooker, 2010).

Non-rule-based dispute resolution methods, on the other hand, are more informal in nature and focus on exigencies of relationship management. Examples of such methods may involve negotiation case-based forms (Yiu and Lee, 2010; Zhang et al., 2016), mediation (Bates and Holt, 2011) and conciliation (Roy et al., 2015).

While discussing the premise of various forms of ADR in dispute resolution, it is also important to acknowledge differences in both form and procedure to dispute prevention. Both rule-based and non-rule based approaches have clear relevance, but the latter focused on relationship management have particular importance for maintaining trust and good working relations between project stakeholders by ensuring conflicts do not arise or escalate. The literature (see Spiess and Felding, 2008; Lorenzo-Hervé,

2012), suggests not only an increasing awareness within the construction industry of the importance of dispute avoidance, but also awareness of ADR's contribution to this. Common ADR techniques to prevent disputes include use of neutral expert or dispute resolution advisers (Gerber, 2001) and/or Dispute Adjudication/Review Boards (El-Adaway and Ezeldin, 2007; Chapman, 2009).

Alternative Dispute Resolution (ADR) also sometimes steers a middle course between rule-based and relationship-based approaches. For example it may be undertaken in private using procedures pre-agreed by the parties as against imposed by the state. This has particular 'rule of law' and 'justice' implications. In this context, the notion of 'rule of law' implies that individual rights are best affirmed in the courts (Dicey, 1885; Scalia, 1989) because these offer "*...mechanisms of accountability*" where "*legal rules are themselves legally ruled*" (O'Donnell, 2004; p. 32 and p.34). 'Justice' on the other hand is an independent moral principle and form of appraisal (Wolff, 1966; Crawshaw et al., 2013). Justice focuses on fairness (Lyons, 1984; Sen, 2006) and equitable moral standards. According to Katzner (1973), it implies treating "*...similarly similarly*" (Katzner, 1973, p. 89), such that "*... like cases be treated alike and ...different cases be treated differently*" (Lyons, 1984, p. 580) while also "*rendering to each person what he or she deserves*" (D'Amato, 1992-93, p. 531).

Alternative Dispute Resolution (ADR) also faces technological challenges. Drawing on extant literature (Orlikowski, 1992; Kline, 1995; Marx, 1997; Schatzberg, 2006) we conceive of these in terms of the need for '*industry-based and practical application of scientific knowledge in the form of informational devices for productive purposes*'. Anecdotal evidence suggests that technology-mediated ADR, known as Online Dispute Resolution (ODR), has become a growing global movement as a consequence of successful initial use within the EU. Drivers for wider use include, for example, the 9th January 2016 requirement for EU countries to apply the Online Dispute Resolution (ODR) Regulation [European Union (EU) Regulation 524/2013] to the developing economies of sub-Saharan Africa. In South Africa, similarly, legal impetus for wider ODR use arose within the ADR provisions of the Consumer Protection Act 2008 (Part A). Soon after, *Onlineombud* (<http://www.onlineombud.com/>), a privately run ADR portal in South Africa, began providing discounted web-based ADR services.

It is within the challenging multi-stakeholder context of construction projects in particular that our study seeks to examine ODR's 'rule of law' and 'justice' implications. We are particularly interested in ODR because scholars and commentators continue to regard ODR as a niche area of ADR with possible limited practical relevance and application (see Ojiako, 2017) and there is a need for research, which might either reassure practitioners spearheading its wider use or highlight specific issues requiring their attention.

3. Background literature - Online Dispute Resolution (ODR)

3.1 What is ODR?

Online Dispute Resolution (ODR) has attracted substantial and growing attention in academic literature. A good basic definition refers to “...*information technology and telecommunication via the Internet (together referred to as ‘online technology’)* applied to alternative dispute resolution” (Hornle, 2003, p. 27). Lavi (2016) defines ODR more expansively as “the entire spectrum of alternatives for the resolution of disputes outside of court which is carried out while using communications and other means of technology, particularly the Internet” (p. 897). According to Shackelford and Raymond (2014), although definitions of ODR vary, some reference to use of technology for dispute resolution is always present. More fully, ODR is always regarded as encompassing disputes fully or partially adjudicated and/or resolved using technology-mediated interfaces (Mania, 2015). More importantly, ODR is always regarded as encompassing more than the use of communications technology, owing to its design as a portal or medium establishing interaction and decision architectures through which disputes are channelled towards resolution.

The major difference between ADR and ODR is that, in addition to disputants and the neutral third party found in ADR, a third entity – technology – inevitably plays an important role in ODR. Hence the philosophy of ODR is quite different to litigation and ADR philosophies. While the latter emphasises the need for all parties to assume that the design intelligence reflected within the technology is adequate and, by its nature, impartial, the latter is more focused on the conceptual, physical, professional and psychological constraints associated with human-centred mediation between disputants (Rabinovich-Einy and Katsh, 2014). These two very different focal points for forming beliefs about the trustworthiness of the process have inevitably influenced decisions about whether to use or avoid ODR as one of several ADR options. While ADR has emphasised differences between, for example, form and procedure and the process, technology has played a major role in eroding such boundaries and therefore represents a faster and more frugal option with the further advantage of circumventing human trust issues that may hamper alternative ADR solutions. Technology may also play a role in eroding physical boundaries as it negates the need for resolution of disputes in a designated physical place (Shackelford and Raymond, 2014). This makes ODR particularly attractive on global projects where face-to-face meeting is problematic, cultural and institutional differences are salient, and because relations between disputants are transitory, incentives to build long-term stakeholder trust are low.

3.2 Implementation of ODR

Accordingly, Rabinovich-Einy and Katsh (2014) characterise ODR as providing an equivalent of face-to-face dispute resolution carried out at “...a distance...” (p.6). However, although the core focus of

ODR has been in the use and exploitation of technology in dispute resolution (Shackelford and Raymond, 2014; Mania, 2015), historically, its principal use and practical value has transformed over the years from ODR as a medium of communication to ODR as an information-processing platform. Rabinovich-Einy and Katsh (2014) clarify further that ODR began as an online form of ADR with the initial focus on using technology for information *communication* (which in reality was not a radical departure from ADR) as against information *processing*.

The literature identifies a number of issues associated with ODR implementation. The first relates to systems design (Rule et al., 2010; Rabinovich-Einy and Katsh, 2012; Shackelford and Raymond, 2014). More specifically, Rule et al. (2010) suggest that a major challenge of ODR implementation relates to scalability. This means that the system must be designed to ensure that the platform can and will continue to function effectively as user numbers and case volumes increase. Other implementation issues highlighted in literature include the need for system flexibility (Smith and Martinez, 2009) to support the creation and maintenance of superior system experiences by users. Such flexibility might be achieved, for example, through technological adaptations to meet varying user needs by improving speed, thoroughness, comprehensibility and accessibility within data sharing processes, based on user feedback (Casey and Wilson-Evered, 2012).

More generally, ODR can be conducted in a number of forms, allowing for varying levels of human intervention or automation, in order to achieve the paramount objective of ensuring that disputants continue to participate in the process and accept its outcomes. For example, ODR can involve the use of fully automated dispute resolution websites, which are generally characterised by little or no human intervention (see, for example, Goodman, 2003). In some instances, ODR involves disputants registering claims and disputes for which fully-automated systems that exploit software algorithms arrive at decisions which are then communicated to the disputing parties. This can be viewed as a ‘black box’ approach, from the standpoint of disputants, appraisable for its record of success in achieving fair outcomes over time. In other instances, human intervention in the form of assessors may be employed to determine final outcomes. Although this can be more costly, it can be preferable where familiarity with ODR technology is limited. For example, a disputant’s right to call upon overriding human arbitration wherever deemed necessary might sometimes be an appropriate means to convince disputants to begin experimental use of ODR, even where such empowerment is never acted upon. It follows that ODR arrangements are comparable with insurance arrangements, which is to say their flexibility and creativity is to a large extent a question of how they integrate elements of facultative decision-making and automatic treaty to achieve the best possible working relationship between the parties concerned. Where large volume of low value claims is at issue, the case for removing the human element (and its associated costs and delays) is of course stronger.

Another major ODR implementation issue relates to enforcement of ODR decisions. ODR can resolve disputes both online (Shih et al., 2005; Katsh, 2007) and offline (Katsh and Wing, 2006). Its services can also be provided by either public or private groups (Shackelford and Raymond, 2014). Public ODR services encompass ODR services that are provided or funded through public institutions such as the courts. These services are usually regulated and will generally be expected to comply with either legislation or other public regulations and standards. Private ODR services on the other hand generally tend to be businesses that offer dispute resolution services. Because they are generally unregulated, adjudications provided by services are also more difficult to enforce through judicial means (Farned, 2010). Instead, their decisions are enforced through public shaming, coercion and community pressure (Miller-Moore, 2006), and in some cases through the participant rationality which accepts ODR as the cheapest way to maintain a ‘win some, lose some’ relationship between stakeholders while maintaining good personal relations between the managers concerned.

3.3 Advantages and disadvantages of ODR

A number of advantages and disadvantages relating to ODR emerge from literature review. Among the advantages is a comparatively cheaper and faster alternative to court-based litigation (Mania, 2015). For example, ODR disputants are generally not required to travel and there may also be lower costs due to avoidance of certain legal processes such as discovery. As with ADR, a number of disadvantages have also been identified. These disadvantages primarily relate to technology and include, in addition to jurisdiction and enforcement challenges, questions relating to the security of information made available to the third-party adjudicator. Such information could be valuable to competitors. In cases of high value claims, it might be reputationally sensitive or have more direct financial implications for a firm’s market value.

More broadly, literature has identified privacy concerns (Rabinovich-Einy and Katsh, 2014; Clifford and Van Der Syde, 2016) alongside concerns relating to jurisdictional ambiguity (Goodman, 2003; Ghoshray, 2006), procedural due process (Ghoshray, 2006), regulation (Morek, 2006; Cortes, 2011) and viable means of enforcement of outcomes (Ortolani, 2016) as areas of concern with ODR, all of which can manifest as cyber-security concerns that reputational and financially sensitive information will be leaked to the media, to competitors, to financial markets or to prospective bidders for a firm’s services. This raises trust questions for ODR of which within the context of justice, is not dissimilar to concerns raised in respect to trust for e-government (see for example Dwivedi et al., 2017; Rana et al., 2015, 2017; Janssen et al., 2017). It is also interesting that Rana et al (2016) extols using ODR-like systems for e-government. In this sense, we note that the literature on the Unified theory of acceptance and use of technology (UTUAT) and Technology acceptance model (TAM) have over recent years

developed. Some scholars such as Slade et al. (2015) and Kapoor et al. (2015) have added 'riskiness' to the UTUAT and TAM literature while others such as Hajli et al. (2017) have focused primarily on 'trust'.

Further ODR challenges relate to the need to identify and overcome various sources of disagreement between disputants can which prevent them from assenting similarly to use of ODR. Studies of these obstacles have considered the impact of demographics such as gender (Brennan, 2011; Casey and Wilson-Evered, 2012), national culture (Boehme, 2015; Sampani, 2015), national regulatory outlook on ODR (Shackelford and Raymond, 2014; Storskrubb, 2016), personal attitudes of conflicting parties (Mania, 2015), and layout and design concerns (Rabinovich-Einy and Katsh, 2012; Shackelford and Raymond, 2014). The literature also discusses differences of outlook associated with professional (Nolan-Haley, 2002) and psychological boundaries (Rabinovich-Einy and Katsh, 2014).

Concerning the challenge of ODR in relation to professional boundaries, there are questions over whether, with the prevalence of rule-based systems and artificial intelligence, dispute resolution as a professional activity necessarily requires practitioners with a legal background (Nolan-Haley, 2002). Concerning psychological boundaries, one issue is that infusing technology into dispute resolution can result in some litigants remaining unaware of the existence of a dispute. This risks normalising the circumstances that produce disputes. In addition, technology can result in misunderstandings related to how information communicated through technology is framed and presented (Rabinovich-Einy and Katsh, 2014). This also risks normalising disputes, for example by influencing how managers perceive the responsibilities of themselves or others for causing disputes.

3.4 ODR, the 'rule of law' and justice

A major academic concern over the use of ODR relates to its impact upon the rule of law and justice. This concern can be theorised in general terms and with reference to universal human nature as relating to our primary expectations as individuals which are unlikely to change even when the structure of our society changes. Thinking in these terms, we can consider not only the relationship between the rule of law and justice, but also how ODR influences social relationships (considered from a social exchange theory perspective). For the present research, we look to the four earlier identified dimensions of justice (distributive justice, informational justice, interactional or interpersonal justice and procedural justice) in order to provide terms for theorising challenges and opportunities in any use of technology-mediated interfaces to prevent or resolve disputes. Similarly, we look to these dimensions of justice to facilitate not only theory concerning optimal allocation of resources but also a way to understand customer satisfaction strategies.

Accordingly, the present research derives from online retailing literature in particular, the specific propositions that:

- (i) Optimal allocation of firm resources is dependent on identification of justice dimensions.
- (ii) The four-factor justice dimensionality can be used to assess satisfaction with online engagements (Lee and Park, 2010).

Table 1 (below) develops the second proposition by deriving specific justice aspirations for ODR from Aresty and Devanesan (2011, p. 277).

Table 1: Justice aspirations of ODR

Justice dimensionality	Impact of ODR upon the rule of law and justice
Open, transparent and pellucid	For ODR to have a positive impact upon the rule of law and justice, it must enable information to be readily available and easily accessible to disputants and dispute resolution practitioners.
Independent and free from influence	ODR should operate in a manner that is independent of all interest. There should be limited interference from businesses, governments and other interest groups unless such interference, for example in the form of regulatory oversight and legislation is of a legitimate nature.
Treatment of all disputants equally and in an impartially	ODR should operate in a manner that is not biased against or towards specific groups of disputants.
Ability to produce desired outcomes	Effective mechanism should be available to ensure that ODR findings can be enforced.
Ethical, Fairness and Integrity	ODR should be conducted in a manner and form which emphasises acceptable behavioural norms on the part of not only disputants, but also ADR practitioners. ODR procedures and processes should be fair and transparent affording all disputants and equal opportunity not only to present and support their positions.
Accessibility	ODR platforms, processes and procedures should be designed for mamimum accessibility - the use of 'smart' technology should be encouraged.
Flexibile and malleabile	There is a need to optimise the design of ODR platforms, processes and procedures for flexibility. Flexibility implies how adaptable these platforms, processes and procedures may be to the individual circumstances of disputants.
Cost effective	ODR platforms, processes and procedures should be designed for maximum efficacy taking into consideration the pervasive nature of technology. They should be designed in a manner that does not demand excessive costs on the part of disputants. There is a need for ODR to recognise the undesirable possibility that the costs of ODR proceedings may actually end up surpassing the value amount of the dispute.

We earlier referenced Lyons (1984) and Sen (2006) to discuss justice from a stance of equitable (fair and positive) distribution of responsibilities and obligations. However, caution should be exercised in light of the possibility that ODR technology might be used unjustly, considering for example tensions between fast and just outcomes (Morozov, 2012). Thus, the question remains as to whether ODR is robust enough to ensure not only prevention of harmful application, but also fairness of decision outcomes. Thus, a justice-centred appraisal of ODR may be particularly interested in whether ODR actually ensures equitable resource allocation among disputants (e.g., do they have equal access to the technology-based interface?). Such an appraisal may focus more broadly on fairness of processes, procedures, policies and practices employed in ODR, especially as disputants may find themselves questioning whether ODR allows for the interrogation of the accuracy of evidence or supporting documentation for claims (Ghoshray, 2006; Aresty and Devanesan, 2011). Concerns have also been raised about whether certain rights can be exerted when using ODR; for example, to what extent, if at all, can a right to appropriate legal advice (and perhaps representation) be assured as part of ODR? (Aresty and Devanesan, 2011). It may well be that ODR can transform conflict between disputing parties from a traditional win-lose outcome, as observed in most construction litigation, towards more win-win outcomes as extolled in partnering. Online Dispute Resolution (ODR) is able to deliver on justice expectations through flexibility offered by technology, which allows for multi-track and simultaneous dispute resolution approaches to be taken. Disputing parties are also more likely to agree to engage with each other, without direct physical confrontation (Raines, 2006), a consideration which itself favours mutual goodwill and, by extension, win-win outcomes. Of course, we also need to acknowledge that technology can exacerbate inequalities and marginalise certain classes of disputants, for example those who are relatively unfamiliar with the technology infrastructure or know-how in terms of use to be able to participate in ODR proceedings on equal terms with other parties. Bearing in mind that technology can greatly enhance information provision (Hoffman, 2007), an important aspiration for ODR can be theorised in terms of technology-driven transparency creating a level playing field among disputants by capturing, integrating and facilitating availability and access to information in such a way as to overcome information asymmetries and enhance the sense of partnership between disputants (Rieh, 2004). This, in turn, can be viewed as favouring goodwill for working towards win-win outcomes and helps protect against litigation.

To sum up, although these ODR/rule-of-law concerns do exist, Aresty and Devanesan (2011) claim that the potential threat of ODR to the principles of justice may be minimal. To mitigate any potential rule-of-law concerns (and divergent outcomes between litigation/ADR on one side and ODR on the other side), scholars such as Carneiro et al. (2013, 2014) emphasise that ODR systems should be designed based on judicial reasoning and emphasising the need for technology to contribute to rather

than undermine justice. Nonetheless the above discussion has underscored that there are may be complex trade-off issues involving speed, simplicity, transparency and justice that deserve consideration each time ODR is used, and which also establish a need for much more ODR research.

4.0 The research methodology

4.1 The research approach

Various scholars in operations (project) management (Meredith et al., 1989; Flynn et al., 1990; Filippini, 1997) and the law (Schuck, 1989; Heise, 1998, 2002; Rhode, 2002; Miles and Sunstein, 2008; LoPucki, 2015) call for more empirical research drawing upon real-world data. Accordingly, in order to explore contemporary use of ODR for small claims on projects, our data collection⁸ was undertaken in a manner consistent with purposive sampling (Smith, 1983) in order to establish a clear context for findings.

4.2 The survey instrument

The survey instrument was designed to ensure richly detailed understanding of the phenomena under examination. In particular, the questions were set within the context of small and low-valued claims in construction projects, recognising:

- (i) That a significant proportion of disputes in construction operations are small and of low-value and
- (ii) That special means for dealing with such disputes has been incorporated into the legislative framework of a number of countries.

The survey instrument consisted of five sections (A to E). Section A sought demographic information from respondents. Section B consisted of 14 questions adapted from an earlier survey reported in Botero and Ponce (2012). These questions focused on the relationship between ODR and the ‘rule of law’. Section C also consisted of 14 questions and was adapted from earlier surveys by Griffith et al. (2006), Liu et al. (2012) and Narasimhan et al. (2013). These questions focused on ODR’s justice

⁸ We undertook purposive sampling acknowledging the works of Onwuegbuzie and Collins (2007) which cautions that compared with randomised forms of sampling, purposive sampling presents bias, which may compromise research validity. Both Zelditch (1962) and Seidler (1974) claim that choosing respondents out of convenience may create such bias. Other sources of bias with purposive sampling include researcher judgments on respondent competencies as primary data sources. However, despite noted bias in purposive sampling, scholars also acknowledge its strengths. For example, it helps ensure that respondents are knowledgeable in the subject matter. This has particular relevance for research into ODR, where we can expect overviews spanning design and use issues, enhanced by an understanding of related justice and rule of law issues, to be very rare.

implications. Section D contained seven questions inspired by technology user acceptance theory (Davis, 1989; Froehle and Roth, 2004) and focused on the acceptance and perceived usefulness of technology by users. Section E then focused on user uptake of ODR technology. Its eleven questions were inspired by Casey and Wilson-Evered's (2012) extension of Venkatesh et al.'s (2003) unified TAM framework and tapped views of ODR with reference to various technology-uptake parameters. Both Part D and Part E of the questionnaire also incorporated elements of Social Exchange Theory (Emerson, 1976; Cropanzano and Mitchell, 2005; Colquitt et al., 2013) to ensure adequate consideration of relations between disputants who agree to use ODR.

4.3 Piloting

We commenced data collection with a pilot survey of eight students taking the MSc in Construction Law and Dispute Resolution at UnivA, a UK partnership university based in the United Arab Emirates (UAE). In line with normative research protocols relating to web and mail surveys (see for example Huang, 2006; Dillman et al., 2009), all pilot study respondents were informed (orally) in advance of the oncoming exercise (with the option to decline participation). Following initial piloting and revision of the questionnaire, data collection commenced.

4.4 The survey

Respondents were then drawn from academics and students (postgraduate and research) of Project management, Construction management, Construction Law and Dispute Resolution (CLDR) and Law. Practitioners were drawn from across these same disciplines. In order to guard against unrepresentative themes emerging due to the purposive character of the sampling, we sought to ensure maximum heterogeneity and heterodox insight of the interviewee sample based on various demographic functions such as profession (discipline) and experience. The academic and student respondents were predominantly affiliated to (i) the Dubai campuses of two UK universities (i) one UK-UAE partnership university, and (iii) two UAE universities. Including academics in the sample ensured in the words of Nie and Kellogg (1999) that... *"the views of academics shape a field and help define research scope, research direction, and teaching focus"* (Nie and Kellogg, 1999, p. 340). As most postgraduate students in the UAE are in near-full time employment, this allowed dual student-practitioner input into the study to be very significant. This entailed many respondents were able to comment on both the study and practice of ODR/ADR and thus offer richer insights. Coughlan et al. (2016) remind us of the importance of such insight by commenting that *"While practitioners and researchers develop a discrete*

understanding of this evidence separately, each needs the other in the generation of a shared understanding” (Coughlan et al. 2016, p. 1673).

5.0 Data analysis

5.1 The collected data

In addition to the eight responses obtained from the pilot study, we eventually sampled an additional 123 respondents. Following a process undertaken in previous studies to cater for missing value handling (Ojiako et al., 2011, 2015; Chipulu et al., 2014), and aimed at achieving enhanced validity for the data analysis, of the questionnaires surveys returned, 31 were excluded from the final analysis due to missing values for some questions. This left a total of 92 usable responses for the data analysis (The original 8 responses from the piloting were also excluded). It is noted that although there is substantial research on the matter of appropriate sample size (e.g. Krejcie and Morgan, 1970; Draugalis and Plaza, 2009), the majority of studies assert that judgments of appropriate sample size need to scope diversity within the selected population.

We first reported on the respondents’ demographic characteristics using descriptive statistics. For the data analysis, we employed SAS 9.4 software (*SAS Institute, Cary, NC*) on a Windows 7 platform.

5.2 Demographic characteristics

Overall, 66 respondents were ‘*Male*’ while 26 were ‘*Female*’ (representing 71.74% and 28.26% of the respondents, respectively). In terms of professional background of the respondents, 39.13% were from academia while 60.87% were from industry. The summary of respondent experience levels suggests that the majority (35.87%) had between 10 and 15 years’ practical involvement and experience in their professions. 39.13% of the respondents were from the academic community. In terms of educational background, while arguably the largest number of respondents (15.22%) indicated a background in ‘*Construction*’ and 10.87% indicated a background in ‘*Law*’ (although when all ‘*Law*’ is summated, this amounts to 25%), it is observed that a significant number of the respondents, 35 (representing 38.04% of the data), indicated ‘*Other*’ in terms of educational background. In Table 2 below, we present a summary of respondent professional backgrounds.

Table 2: Summary professional background of respondents

<i>Profession</i>	<i>Frequency</i>	<i>Percent</i>
<i>Business Management</i>	7	7.61
<i>Construction</i>	12	13.04
<i>Construction, and Business Management</i>	1	1.09
<i>Construction, and Project Management</i>	8	8.7
<i>Construction, Law</i>	1	1.09
<i>Law</i>	12	13.04
<i>Law, and Business Management</i>	2	2.17
<i>Law, Project Management</i>	1	1.09
<i>Other</i>	17	18.48
<i>Project Management</i>	26	28.26
<i>Project Management, Business Management</i>	2	2.17
<i>Project Management, Other</i>	3	3.26

5.3 Analysis of ODR adoption

To examine adoption of ODR, respondents were asked, ‘*During the past three years, have you in a professional capacity or anyone you work with (for example your employer) been involved in a small or low-valued project claims dispute that, resulting in initiation of Online Dispute Resolution (ODR) proceedings?*’. This question elicited a total of 49 ‘*No*’ responses, 24 ‘*Yes*’ responses and 19 ‘*Not sure*’ responses. ‘*Not sure*’ responses were dropped, leaving a dataset of 73 respondents. A logistic regression was then conducted in SAS 9.4, setting ‘*Adoption of ODR*’ as the dependent variable with the modelled event being ‘*yes*’. All the other 45 variables (from B_1 to E_45 shown in Appendix A) measuring beliefs in ODR, likelihood of adoption of ODR and forms of justice supplied the independent variables.

To avoid over-fitting, Peduzzi et al. (1996) recommend logistic regression models with more than 10 cases per predictor variable. Hence, it was determined that a model with seven predictors should be a good fit. Thus, in SAS 9.4, the best subset selection criterion SCORE, based on branch-and-bound algorithm, was used to determine the best subset of seven predictors from all possible 45 predictors (see Furnival and Wilson, 1974). The seven predictors selected as the best subset are shown in Table 3, below. The three best predictors asked questions about an individual’s likelihood to adopt ODR. In addition, of the seven, two (i.e E3_42 and E4_43), appeared closely aligned to uptake factors earlier identified by Casey and Wilson-Evered (2012).

Table 3: Selected best subset predictors

Variable Name	Question
B_02	How likely is it that Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes will be conducted in an open, transparent and easily understood manner?
B_09	Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to be conducted in a manner which is consistent.
C1_16	Online Dispute Resolution (ODR) proceedings are likely to encourage the development of positive relationships between the parties involved in small and low-valued project claim disputes.
C3_21	Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to be open when communicating relevant information and in managing conflicts.
E3_41	People who influence my behaviour are likely to think that using Online Dispute Resolution (ODR) systems is a good idea.
E3_42	People who are important to me are likely to think that using Online Dispute Resolution (ODR) systems is a good idea.
E4_43	An Online Dispute Resolution (ODR) system is likely to operate in a truthful and honest manner.

We then re-ran the logistic regression model, this time only including the seven predictors selected in the previous step. The logistic regression model suggested a fit for the data with fit statistics as shown below in Table 4. In Table 5, we show estimated effects for the seven predictors.

Table 4: Global null hypothesis test: $BETA=0$

Test	Chi-Square	DF	Pr > ChiSq
Ratio of Likelihood	19.2694	7	0.0074
Score	15.82	7	0.0268
Wald	12.0311	7	0.0995

Table 5: Estimate of maximum likelihood analysis

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-6.3063	2.8792	4.7975	0.0285
B_02	1	-0.2963	0.2605	1.2938	0.2554
B_09	1	0.2851	0.2064	1.9071	0.1673
C1_16	1	0.1848	0.1898	0.9479	0.3303
C3_21	1	0.3768	0.1866	4.0786	0.0434
E3_41	1	0.4715	0.2641	3.1881	0.0742
E3_42	1	0.509	0.2836	3.2215	0.0727
E4_43	1	0.3456	0.2295	2.2675	0.1321

These estimated effects suggest that only one of the predictors significantly predicts ODR adoption at the 0.05 p-value level. The significant predictor is C3_21, which refers to the question, '*Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to be open when communicating relevant information and in managing conflicts*'. The logistic regression model suggests that strong belief in this statement predicts high likelihood of adoption of ODR, thus underscoring the fundamental importance of the link between transparency, trust and cultivation of goodwill between disputants, which we mentioned earlier.

6.0 Discussions

6.1 Overview of findings

This paper examined the 'rule of law' and 'justice' implications in using ODR platforms as a technology-mediated interface for small and low value claims dispute resolution on construction projects. One of the two main findings is, surprisingly, that the results of the analysis of data suggested no implications of ODR use for the concepts of the 'rule of law' and 'justice' within the context of project claims disputes in the construction industry. The second main finding, however, is that the outcomes of the logistic regression modelling suggest a strong belief that '*ODR proceedings are likely to encourage parties involved in small and low-valued project claim disputes to be open when communicating relevant information and in managing conflicts*'.

Next, we discuss these two main findings from four perspectives of ODR highlighted earlier during the review of literature. The four perspectives are: (i) respondent demographics, (ii) national regulatory outlook on ODR, (iii) personal attitudes and (iv) ODR layout and design concerns. Following discussion of the four perspectives, we assess the outcome of the logistic regression model.

6.1.1 Respondent demographics

The extant literature tells us that although construction activities are information-intensive, there is much scepticism within construction professions on the assistance technology can provide (for example Son et al., 2012), leading to its poor adoption and use within the industry (see for example World Economic Forum, 2016). Most of the sample were '*Male*' (71.74% of the respondents). Technology acceptance model (TAM) literature suggests men are more strongly influenced to adopt technology based on utility perceptions (Koivisto and Hamari, 2014; Cyr et al., 2016). Women on the other hand tend to be influenced to adopt/use technology based on ease of use perceptions.

Given that the industry remains heavily male-dominated (Gale, 1994; Dainty et al., 2000; Watts, 2007; Thomas and Buckle-Henning, 2007; Francis and Prosser, 2014; Pinto et al., 2015, 2017), we

expected utility focused views of ODR to prevail among the respondents. Findings suggest that the specific utility foremost in respondent minds may well be an improved working relationship between disputants.

In terms of educational background, we mentioned earlier that respondents indicating ‘*Other*’ for their educational background were in the majority. While one may therefore infer that a significant number of the survey respondents do not possess specific disciplinary educational backgrounds, an alternative perspective can be advanced recognising project management profession as an ‘accidental profession’ (Pinto and Kharbanda, 1997), emphasises softer skills (Stevenson and Starkweather, 2010; Carvalho and Rabechini, 2015) well represented among the respondents. This is consistent with our sample being focussed on the highly practical advantages associated with building transparency through ODR.

6.1.2 National regulatory outlook on ODR

We mentioned above that the respondents were largely drawn from the UAE. However, although ADR in various forms such as ‘*Tahkim*’ (Arbitration) and ‘*Sulh*’ (Negotiation – mediation and conciliation) has a long history of application in the Middle East, possibly from as far back as the seventh century (Kutty, 2006; Pely, 2008; Islam, 2012), literature on current usage suggests considerable scepticism about business use of ADR. An important factor restricting its use is that under Federal Law No. 2 of 2015 (New Companies Law), UAE public companies are prohibited from entering into contracts with an arbitration clause unless such a power is registered in their Articles of Association. It could thus be that some respondents to our survey simply did not construe ODR as meeting an acceptable threshold of what Kanakri and Massey (2016) term as ‘*arbitrability*’ – in effect, something worth being arbitrated due to rule of law implications. The literature appears contradictory on this point. While a study by Zanelidin (2006) on types, causes and frequencies of construction claims found that most construction disputes in the UAE are resolved through ADR with only approximately 4.9% going to litigation, a more recent study by Blanke and Kotb (2015) suggests that UAE construction disputes are generally complex with parties still highly likely to engage in substantial litigation. Fear of litigation may, in particular, underlie the premium our respondents placed on building transparency through ODR. .

6.1.3 Personal attitudes

Our literature review identified impacts of personal attitudes of conflicting parties on ODR. The impersonal nature of technology means that behavioural cues articulating the feelings of disputants may be absent in ODR proceedings, thus limiting interaction between parties (Raines, 2006; Poblet and

Casanovas, 2007). This can potentially obstruct trust building between disputants which could have led to scepticism about ODR among the respondents. The UAE is a highly collectivist society (Grant et al., 2007), entailing that trust-based- personal relationships are often deemed vital for successful business relationships (Grant et al., 2007; Laeequddin et al., 2009). Perhaps for this reason, our findings were in line with earlier studies by Boehme (2015) who found considerable scepticism about Online Dispute Resolution in the Republic of Ireland due to perceptions that ODR did not offer added value to more traditional forms of ADR. If ODR is valued primarily as a tool for building transparency, as our findings suggest, then it would be rational for the prospects for face-to-face trust building offered by ADR to be more appealing to many respondents than would dealing blindly with perhaps unknown others through a technological interface.

6.1.4 Layout and design

Layout and design concerns with ODR might help explain why this study found no perceived tensions between the rule of law and ODR. Literature flags up two main design considerations when exploring use of technology-mediated interfaces in the law (Bingham, 2002; Gooding et al., 2015). The first deals with the extent to which the user interface helps users understand the nature of and need for ODR. User interface design considerations therefore include a focus on predicting what type of actions users are likely to take when using ODR systems and ensuring that the interface and layout are designed to be accessible and navigable. Layout and design elements of ODR systems requiring such consideration may include navigational components (for example, search fields), input controls (for example, text sizes and fields), and informational components (for example, progress bars). It is possible that respondents were reassured sufficiently by the clear and easy-to-navigate interfaces as to believe that appropriate and highly standardised procedures were being followed with no residual rule of law implications not already considered at the interface design stage. Hence future TAM research may be useful in exploring this possible overconfidence in technology issue.

6.2 Modelling outcome

The outcome of the modelling from the logistic regression suggests strong respondent beliefs that *‘Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to be open when communicating relevant information and in managing conflicts’*. Our contention is that Social Exchange Theory (SET) provides a highly plausible theoretical framework for understanding this finding.

Social Exchange Theory serves as a means of demonstrating possible adoption challenges relating to technology-mediated interfaces in dispute resolution and how individuals react to questions

of the ‘rule of law’ and justice (see Emerson, 1976; Cropanzano and Mitchell, 2005; Colquitt et al., 2013). Described as “one of the most influential conceptual paradigms in organizational behaviour” (Cropanzano and Mitchell, 2005, p. 874), it mainly proposes that social interactions are likely to produce associated obligations. More fully, Social Exchange Theory (SET) holds that underlying the willingness of an individual to interact with others is the expectation that they will be rewarded through the exchange rather than punished (Wayne et al., 2002). Thus, where actions lead to rewards, repeat actions become more likely. Similarly, the more valuable a particular exchange is to an individual, the more likely it becomes that rewarded actions will be repeated. However, when actions result in unexpected punishment or when less value is obtained than was anticipated, prospects for repeat actions diminish. Thus, the theory posits that, over time, patterns of social exchange will evolve into reciprocal commitments reinforced by mutually positive experiences. However, for such relationships to develop, the parties will need to act in accordance with rules of exchange which Emerson (1976) refers to as a shared... “...*normative definition of the situation that forms among or is adopted by the participants in an exchange relation*” (Emerson, 1976, p. 351). Taking stock, SET can help explain how rule of law and justice manifest in social relations. In fact, as Rawls (1999) puts it... “*Justice is the first virtue of social institutions*” (p. 3). More specifically, the use of SET to explain possible adoption challenges relating to technology-mediated interfaces in dispute resolution was deemed appropriate in view of the following sociological insight. Bourdieu (1986) conceptualised the law as theoretically dependent on social practices insofar as its purpose is to maintain productive social exchanges within these practices. This position is supported by Smith’s (2006) view that... “*social practices are at the foundations of law*” (p. 265). Looking from this standpoint, ODR research becomes important as a basis for understanding the adequacy of law in supporting ODR to deliver its various benefits, and more specifically for understanding how ODR user experiences can create new justice concerns focussed on social exchange issues. However, this would entail engaging with the possible overconfidence in technology issue we mentioned in the last section. Looking at our two main findings through the lens of SET strongly suggests that respondents look to ODR as a mechanism ensuring that justice is seen to be done through the transparency it offers, with building transparency further seen as based on reciprocal acts of goodwill, which move ODR processes forward towards just resolutions.

Further applying SET in this way to explain adoption challenges relating to technology-mediated interfaces in dispute resolution, and also following an approach adopted earlier by Collett (2006) and Molm et al. (2006), we can also useful consider the impact of third parties into designated exchange settings and processes. SET has predominantly focused on social exchanges, which are not mediated; in effect, they are direct exchanges between two primary actors. However, the reality is that third parties may in fact transform not only the context of dispute resolution as social exchanges, but the way and

manner in which disputants interact, resulting in different outcomes for both parties. Collett (2006), for example, suggests that third party intervention in social exchanges⁹ may in fact greatly improve outcomes for disputing parties – and indeed that is consistent with our finding that disputants tend to have confidence in ODR. Nonetheless, there are also further potentially transformative effects of third parties on social exchanges that future ODR research might usefully explore.

We are particularly mindful that ADR or litigation may occur in parallel with use of ODR (see Hervey, 2010). This further complexifies the exchange relationships at issue, for example by entailing that expressions of enthusiasm for ODR become important social exchange signals that can help steer troubled relations between disputants in various parallel interactions. Bearing these possibilities in mind, it seems useful to view respondents as disposed to evaluate their interactions with technology-mediated interfaces during dispute resolution proceedings from a number of perspectives spanning legal opinions, case law, their estimated likelihood of winning if they assent to the proceedings (see P'ng, 1983), and their foresight of how costs and rewards arising from ODR use may affect exchange relationships over the longer term. Bearing in mind these complexities, levels of transparency volunteered by disputants may be valued as useful proxy indicators for generally improving complex relations between disputants.

More generally, within the context of our study, SET theory suggests that disputants' reactions to ODR proceedings are likely to be instrumentally based and evaluated against what they expect to gain or lose from their use of technology-mediated interfaces to achieve the resolution of small and low-valued project claims. A further assumption here is that a decision to utilise a third party to settle disputes either in court through litigation or through ADR is a two-step process with first the decision to file the action or lodge the dispute and then the decision to pursue the litigation or dispute. Under such circumstances, it can be assumed that litigants or disputants will only proceed with such action on the assumption that any expected value from that social interaction will be of greater value than the costs involved in pursuing it. However, this does not, as P'ng (1983) reminds us, take into consideration that such action may be simply a tactic by either disputant to force the other party to settlement or simply to bring such grievance to their attention. Taking this possibility forward, we nonetheless assume that disputants are only likely to assent to engage with ODR if they are of the view that the rewards accrued from the exchange¹⁰ nonetheless exceed the costs of exchanges overall. Given that the study respondents emphasise benefits associated with transparency, and that they are also relatively unconcerned with justice and rule of law implications of ODR processes, it can be further inferred in the light of the above

⁹ In the context of our study, technology-mediated interfaces.

¹⁰ Which we assessed against the four-factor dimensionality of justice.

theory that the respondents are also not particularly concerned about possible tactical misuse of ODR procedures to seek partisan advantage.

7.0 Conclusions

Our study makes both theoretical and practitioner contributions to construction law and dispute resolution (CLDR) – and by implication wider project (and construction) management disciplines. Findings establish a need for further and more expansive studies on the rule of law’ and ‘justice’ implications for ODR which practitioners themselves may at present be giving insufficient attention to. Doing so, however, calls for sensitivity towards differences in terms of how rule of law is conceptualised in different cultural contexts (see Hurd, 2014; Gutmann and Voigt, 2015; Zou, 2016). Even though there are ever-expanding studies on ODR, a review of extant literature on the research agenda for dispute adjudication has only made cursory mention of the roles of technology in dispute resolution (e.g. Bingham, 2002; Jones, 2003). We also observe that dispute adjudication has not yet been identified as an area of interest within studies seeking to establish agendas for construction and project management research (e.g. Winter et al., 2006; Svejvig and Andersen, 2015; Pinto and Winch, 2016). However, we do feel that the study can be construed to fit within the specific project management research agenda concerned with “how social and political processes shape projects, e.g. power structures, emotionality and identities” (Svejvig and Andersen, p. 283).

The insights gleaned from our findings also serve as a platform for a range of practical guidelines associated with understanding the potential role of technology-mediated interfaces in the resolution of claim disputes. Although our study relates to the construction industry, we contend that our findings can usefully be considered for their relevance within other projectised industries and sectors which have a prevalence of claims (Ramseyer and Rasmusen, 2010), e.g. pharmaceuticals (FDA, 2006; Harada et al., 2014). More specifically, we have identified four factors – demographics, prevailing ADR culture, personal culture and, finally, layout and design concerns – as together constituting a useful research framework for exploring complex and sometimes interacting threats to the effective use of ODR.

Noting Price and Murnan’s (2004, p. 66) point that “...a limitation of a study design or instrument is the systematic bias that the researcher did not or could not control and which could inappropriately affect the results”, our study does exhibit some limitations, which may serve as an opportunity for further studies. *First*, our study did not initially acknowledge that prevailing local perspectives and ADR culture may have a substantial influence on understanding the likely role of technology-mediated interfaces in dispute resolution. The literature, however, tells us that technology use is impacted by social and cultural norms (Jasanoff and Jasanoff, 2009; Zhao et al., 2014). So too is the concept of the rule of law (Sampani,

2015) and justice (Cotterrell, 2013; Sampani, 2015). Future studies may seek to take this into account. *Second*, despite the existence of socio-cultural differences in how the rule of law and justice are conceptualised between different countries and legal traditions (see Hurd, 2014; Gutmann and Voigt, 2015; Zou, 2016), we did not comment on these differences during the study. In particular, we did not consider these differences during the data-gathering stage; thus, respondents in the UAE were in effect subjected to a questionnaire developed within a different rule-of-law and justice context. Arguably, a study more focussed on the legal culture within the UAE might have led to the generation of some hypotheses concerning ODR's rule of law implications for ODR which respondents might usefully be prompted to comment on.

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Appendix A: The summated variables

Summated Variables	REVERSE CODE	Variable Name	Section	Question Number
		Case Number		
		Gender	A	1
		Education	A	2
		Profession	A	3
		Industry	A	4
		Experience	A	5
Belief in Efficacy of ODR		B_01	B	1
		B_02	B	2
		B_03	B	3
		B_04	B	4
	Reverse	B_05	B	5
	Reverse	B_06	B	6
	Reverse	B_07	B	7
		B_08	B	8
		B_09	B	9
	Reverse	B_10	B	10
	Reverse	B_11	B	11
		B_12	B	12
		B_13	B	13
ODR_Use (Has used ODR in last three years)		B_14	B	14
Distributive Justice. Not used because only two items. A scale needs at least THREE Items.		C1_15	C1	15
		C1_16	C1	16
Proced_Justice (Procedural Justice)		C2_17	C2	17
		C2_18	C2	18
		C2_19	C2	19
		C2_20	C2	20
Inter_Justice (Interactional Justice)		C3_21	C3	21
		C3_22	C3	22
		C3_23	C3	23
		C3_24	C3	24
		C3_25	C3	25
Infor_Justice (Informational Justice)		C4_26	C4	26
		C4_27	C4	27
		C4_28	C4	28
Tech_Acceptance (Acceptance of Technology)		D_29	D	29
		D_30	D	30

		D_31	D	31
		D_32	D	32
		D_33	D	33
		D_34	D	34
		D_35	D	35
Likelihood of using ODR		E1_36	E1	36
		E1_37	E1	37
		E2_38	E2	38
		E2_39	E2	39
		E2_40	E2	40
		E3_41	E3	41
		E3_42	E3	42
		E4_43	E4	43
		E4_44	E4	44
		E5_45	E5	45
		E5_46	E5	46

Appendix B: The survey questionnaire

Part A: Respondents' Demographic Information

Gender

Educational Background

Professional Background

Industry Background

Number of years' working experience

Part B: ODR and its relationship to the Rule of Law

1. How likely is it that parties involved in a small and low-valued project claim dispute will resort at first instance to technology-mediated forms of Alternative Dispute Resolution (also known as Online Dispute Resolution) to settle a dispute?
2. How likely is it that Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes will be conducted in an open, transparent and easily understood manner?
3. How likely is it that Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes will be conducted in an intelligible, clear and predictable manner?
4. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to be supported by easy-to-understand information on rights and obligations. Information is generally likely to be available in plain language making such proceedings easily understood.
5. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to be prohibitively expensive; On some occasions, the cost of such proceedings is likely to exceed the value of the claim itself.
6. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to be subject to unreasonable delays.
7. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are not likely to effectively resolve disputes.
8. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to be conducted in a manner considered fair to all parties.
9. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to be conducted in a manner which is consistent.
10. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely not to correctly apportion liability.
11. Parties involved in Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely not to receive adequate legal counsel.

12. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to allow for parties to challenge evidence presented by opposite parties.

13. Online Dispute Resolution (ODR) proceedings involving small and low-valued project claim disputes are likely to allow for parties to challenge judgments, findings and rulings through open, transparent and easily understood appeals processes.

14. During the past three years, have you in a professional capacity or anyone you work with (for example your employer) been involved in a small and low-valued project claims dispute that resulted in Online Dispute Resolution (ODR) proceedings being initiated?

PART C The Impact of ODR on Justice – Distributive Justice

15. Online Dispute Resolution (ODR) proceedings are likely to encourage a high level of engagement between the parties involved in small and low-valued project claim disputes.

16. Online Dispute Resolution (ODR) proceedings are likely to encourage the development of positive relationships between the parties involved in small and low-valued project claim disputes.

PART C (The Impact of ODR on Justice – Procedural Justice

17. Online Dispute Resolution (ODR) proceedings are likely to encourage the parties involved in small and low-valued project claim disputes to act fairly.

18. Online Dispute Resolution (ODR) proceedings are likely to encourage the parties involved in small and low-valued project claim disputes to fully explain their decision-making criteria to each other.

19. Online Dispute Resolution (ODR) proceedings are likely to encourage the parties involved in small and low-valued project claim disputes to apply consistent decision-making criteria when dealing with each other.

20. Online Dispute Resolution (ODR) proceedings encourage the use of consistent procedures and processes.

PART C The Impact of ODR on Justice – Interactional Justice

21. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to be open when communicating relevant information and in managing conflicts.

22. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to agree with relative ease the important matters or principles being disputed.

23. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to exchange information in a timely manner.

24. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to keep each other informed of any changes that may affect the proceedings or the other party.

25. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to treat each other with respect.

PART C The Impact of ODR on Justice – Informational Justice

26. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to routinely exchange timely information.

27. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to develop and share information.

28. Online Dispute Resolution (ODR) proceedings are likely to encourage parties involved in small and low-valued project claim disputes to routinely view transparency in communication as important.

PART D (User Acceptance of Technology)

29. Perceived Usefulness of Online Dispute Resolution (ODR) in relation to small and low-valued project claim disputes.

30. Employing Online Dispute Resolution (ODR) is likely to encourage small and low-valued project claim disputes to be resolved more quickly (than for example non-technology-mediated forms of Alternative Dispute Resolution).

31. Employing Online Dispute Resolution (ODR) is more likely than non-technology-mediated forms of Alternative Dispute Resolution to enhance the success (performance and productivity) of projects.

32. Online Dispute Resolution (ODR) proceedings are more likely than non-technology-mediated forms of Alternative Dispute Resolution to allow parties to challenge judgments, findings and rulings through open, transparent and easily understood appeals processes.

33. The procedures utilised in Online Dispute Resolution (ODR) proceedings are likely to be easier to **USE** than procedures employed in non-technology-mediated forms of Alternative Dispute Resolution.

34. The procedures utilised in Online Dispute Resolution (ODR) proceedings are likely to be easier to **UNDERSTAND** than procedures employed in non-technology-mediated forms of Alternative Dispute Resolution.

35. The procedures utilised in Online Dispute Resolution (ODR) proceedings are likely to be more **FLEXIBLE** than procedures employed in non-technology-mediated forms of Alternative Dispute Resolution.

PART E (User Uptake of Technology)

PART E (User Uptake of Technology) - Performance expectancy

36. Using Online Dispute Resolution (ODR) is likely to increase the chance of settling a dispute.

37. Using Online Dispute Resolution (ODR) is likely to enhance the dispute resolution.

PART E (User Uptake of Technology) - Effort expectancy

- 38. I am likely to find an Online Dispute Resolution (ODR) service easy to use.
- 39. Learning how to operate an Online Dispute Resolution (ODR) system is likely to be easy for me.
- 40. The use of an Online Dispute Resolution (ODR) system is likely to be clear and understandable to me.

PART E (User Uptake of Technology) – Social Influence expectancy

- 41. People who influence my behaviour are likely to think that using Online Dispute Resolution (ODR) systems is a good idea.
- 42. People who are important to me are likely to think that using Online Dispute Resolution (ODR) systems is a good idea.

PART E (User Uptake of Technology) – Trust Influence expectancy

- 43. An Online Dispute Resolution (ODR) system is likely to operate in a truthful and honest manner.
- 44. An Online Dispute Resolution (ODR) system is likely to operate in my best interests.

PART E (User Uptake of Technology) – Behavioural intention

- 45. If Online Dispute Resolution (ODR) systems are available now, I am likely to use them.
- 46. I am likely to use Online Dispute Resolution (ODR) systems as soon as they become available.