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A Comparison of the Suitability of FIDIC and NEC Conditions of Contract in Palestine

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Abstract

Purpose - The standard forms of construction contract are receiving greater attention in the management of projects scholarship as they probably influence the project success and project disputes. The extant literature suggests that the standard forms of construction contract are one of the top sources of disputes. This research, therefore, examines the effectiveness of the standard forms of construction contract, FIDIC and NEC, in reducing disputes in the Palestinian construction industry.

Design/methodology/approach - The researchers have used qualitative methods to collect data and more specifically have undertaken twelve semi-structured interviews.

Findings - The study reveals that the standard forms of construction contract can be a tool to minimise disputes, but certainly not to eradicate them, and NEC appears to be more capable than FIDIC to do so.

Originality/value - This study contributes to knowledge by bringing an industrial perspective into the role of standard forms of contract in disputes creation and avoidance. The interviewees, recurrent users of FIDIC contract, criticised certain features and expressions and proposed some solutions

Keywords: FIDIC; NEC; New Engineering Contract; Engineering and Construction Contract; ECC; standard forms of construction contract; Disputes; Palestine.

1. Introduction

Construction disputes is an important area for academics trying to understand why construction contracts go wrong. Construction disputes are problematic, unpleasant, and dysfunctional, destroy client-supplier business relationship, costly, and may lead to cost/time overrun (Fenn, 2011). The literature includes a growing body of scientific research investigating the role of contracts in dispute materialisation. For instance, Clegg (1992) proposed that, from a sociologist view, contracts cause conflict. Cheung and Pang (2012) argue that contracts are the root cause of all types of construction disputes. Specifically, Fenn et al. (1997) argue that one of the top factors creating disputes in the construction industry is standard form of construction contract. They empirically compared a wide range of standard forms of construction contract and concluded that certain contracts may cause more disputes than others. However, it is unknown how standard forms of contracts may contribute differently to the formation and evolution of disputes. Therefore, this research theoretically and empirically examine this notion by comparing the effectiveness of FIDIC and NEC standard forms of construction contract in minimising disputes.

The choice of FIDIC and NEC contracts in this research is based on three-folds. First, the fundamental aim behind drafting and bringing NEC into life is to resolve the problem of disputes arising and the adversarial behaviour in construction. Indeed, the Palestinian construction industry suffers from the adversarial relationships between construction parties and the increasing level of disputes (Enshassi *et al.*, 2009). Second, infrastructure and construction projects are implemented by the government or by foreign or international employers. The government uses FIDIC 1999 conditions of contract and many foreign or international employers or organisations financing construction projects use FIDIC such as the World Bank, the Asian Development Bank, the Islamic Bank for Development, the European Commission and different United Nations bodies (Aljarosha, 2008; Swiney, 2007; Zhanglin and Yuli, 2010). Yet, some of these organisations are testing the potential usage of NEC instead of FIDIC in their projects. For instance, the Asian Development Bank and the UK's Overseas Development Agency are testing replacing FIDIC by NEC for their sponsored projects (Ndekugri and McDonnell, 1999). Third, FIDIC is the most widely used

NEC instead of FIDIC in their projects. For instance, the Asian Development Bank and the UK's Overseas Development Agency are testing replacing FIDIC by NEC for their sponsored projects (Ndekugri and McDonnell, 1999). Third, FIDIC is the most widely used international form of construction contract in the world (Seifert, 2005). At the same time, the usage of NEC in the UK and 30 other countries in the world is an indicator of its increasing popularity worldwide (Thompson *et al.*, 2000). This means the research findings may be transferable to many jurisdictions.

The remainder of the paper is structured as follows. Firstly, five aspects of FIDIC conditions of contract are compared and contrasted with those of NEC. This is followed by brief explanations of the conceptual framework and the interviews which were carried out with twelve professionals working in the Palestinian construction industry. The views and opinions of the interviewees with regards to the effectiveness of FIDIC and NEC in reducing disputes in the Palestinian construction industry are then discussed prior to the presentation of the conclusion.

2. FIDIC Compared and Contrasted with NEC

This comparison is neither clause-to-clause nor is it claimed to be exhaustive and encyclopaedic. A comprehensive and holistic comparison between FIDIC suite of contracts and NEC suite of contracts is very ambitious and board aim because there are many contracts in each family. Therefore, the scope of this study is limited to FIDIC 99 Red Book vs. ECC3 (NEC3 Engineering and Construction Contract). Further, the study concentrates on the five most important aspects that normally give rise to construction disputes in Palestine, as the available literature suggests. These include disputes arising from misunderstanding and misinterpretation of contract conditions written in English, and onerous terms (i.e. unfair risk allocation) (Enshassi *et al.*, 2009; Murtaja; 2007; Enshassi, 1999), variation orders (Abedmoussa, 2008), the lack of trust between contractors and engineers (Saqfelhait, 2012) that creates an adversarial environment in which one of the most important factors determining bid-no-bid and mark up decisions are "project engineer" (Enshassi *et al.*, 2010) in addition to the endemic volatile and unstable political environment (e.g. as borders' closures, blockade, and hostilities) that leads to cost and time overruns (El-Sawalhi and El-Riyati, 2015, Enshassi *et al.*, 2009).

2.1 Clarity and Simplicity

Chong and Zin (2009) argue that one of the main causes of disputes is misunderstanding and misinterpretation of contract clauses and the preventive solution lies in the use of plain English. Clarity is important to ensure that all parties of a contract understand what they are getting themselves into, their rights and obligations, and the risk apportionment and thus what risks they bear.

FIDIC has been criticised for using obscure, complicated, inscrutable and legal language that has phrases traced back to contracts of the 19th century in England (Broom and Hayes, 1997). In addition, FIDIC's poor layout, long sentences and substantial cross-referencing makes it difficult to understand (Cutts and Maher, 1986; and Wydick, 1978). Nevertheless, it is important while reviewing these critiques to consider their time context, as they were written prior to or just after the release of FIDIC 1987. It worth mentioning that one of the objectives behind drafting the FIDIC 1999 Rainbow edition was to simplify the language. However, it is uncertain whether FIDIC has been completely successful in this aim. Probably, FIDIC has been improved much from its earlier editions and has moved towards fewer clauses and clearer language and contract structure, but the real judgment is left to its users. Indeed, this area is a worthwhile investigation for further research.

NEC is different from FIDIC as one of its three declared objectives is to minimise the incidences of disputes arising from unclear language. NEC uses non-legalistic ordinary unequivocal language, straightforward, simple and plain English, short sentences (with no more than 40 words), a bulleted structure and avoidance of confusing cross-references. Also, there are guidance notes and flow charts to assist in the understanding of how to create and operate the contract (Eggleston, 2006; Gould, 2007; Li, 2006). The abandoning of "legal language" is a revolutionary step by the NEC drafters which is much debated. The drafters claim that they sacrificed legal concepts in the interests of better management of projects. This makes the language more understandable to builders at site level (Lavin and Potts, 1998; Li, 2006). Moreover, it saves time and money paid to lawyers to translate the contract to legal phrases, and then translate it back to users so they know what it means (Abrahamson, 1979). On the other hand, the main criticism of this approach is that it discards the accumulated contractual wisdom of generations, reinvents the wheel and reduces the legal certainty which could increase the chance of contractual disputes (Eggleston, 2006; Valentine, 1996).

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contractual wisdom of generations, reinvents the wheel and reduces the legal certainty which could increase the chance of contractual disputes (Eggleston, 2006; Valentine, 1996).

To sum up, the research acknowledges that NEC is not perfect, but it is a considerable improvement in clarity compared to FIDIC. Indeed, what is required to avoid disputes is clear English, and certainly not a long history of case law and judicial precedents on a particular clause or phraseology. To avoid disputes in the first place, people at site level should be able to understand the conditions, and not need to memorise a dozen cases about particular clauses.

2.1 Risk Allocation and Management

It is inherent for any project, particularly in the construction industry, to involve risks. It is not possible to eliminate all risks, but what can be done is to allocate the risks to the various parties who then manage them (Kozek and Heberd, 1998). The standard forms of conditions of contract provide a framework to regulate the process of risk allocation by defining the rights and obligations of both parties.

Both FIDIC and NEC attempt to allocate risks fairly and reasonably between the employer and the contractor (Ndekugri and McDonnell, 1999). The basic principle to achieve this is by allocating the risk to the party best able to control and manage the risk event and bear the risk consequences (Bunni, 2005; Eggleston, 2006; Potts, 2008; Williams, 2001).

FIDIC is based on the principle of balanced risk sharing and has been widely accepted by employers and contractors as a reasonable compromise (Bunni, 2005; Osinski, 2002). The employer bears only the risk of unforeseen negative conditions that are not offset by unforeseen positive conditions. This means there is less chance for contractors to get time extensions and cost compensation for unforeseen events since they have to be unforeseen, and if they are, they need to be offset by other favourable conditions. At first glance, FIDIC's new philosophy of "conditions-balancing" seems fair, equitable, and desirable and similar to pain/gain of partnering arrangements. However, it potentially increases disputes because it provides the parties with more things to argue about, which could be costly and impossible to settle (Swiney, 2007).

Unlike FIDIC, NEC recognises that the standard form should not only be a mechanism for risk allocation, but also for a proactive and dynamic risk management. NEC acknowledges that an important part of risk management is effective communication between the parties. This includes risk registers, risk prevention, early warning and risk reduction meetings (Wassenaer, 2009).

The controversy and comparison between NEC and FIDIC regarding this area hinges on two views on the purpose of a standard form of construction contract. Should the standard form be a manual for project management procedures and practices or an agenda for legal actions? FIDIC tends to be skewed towards the latter narrow view of a contract, as it is principally designed to focus more on the risks, liabilities, obligations and responsibilities of the parties (Heaphy, 2011). Therefore, the parties will use the contract when things go wrong or disputes surface in an attempt to find a clause that will support their contractual position or justify a claim or to allocate blame (Brown, 2000; Eggleston, 2006). NEC is radically different from FIDIC in that it focuses on informed, proactive and foresight-based management and decision-making, rather than a reactive and hindsight-based negative approach. Collaboratively applied foresight mitigates problems, shrinks risks and adversarial behaviour, and removes most of the grounds for dispute (Lavin and Potts, 1998). However, focusing on the management side at the expense of the legalistic and contractual side could produce an "obligationally incomplete" contract (Eggleston, 2006; Hughes and Maeda, 2002).

Apparently, NEC has been more successful than FIDIC in expanding standard forms' role towards risks. NEC manages risks proactively and dynamically, and, unlike FIDIC, is not only concerned about risk allocation.

2.2 Force Majeure and Prevention Events

Force majeure events are of a great importance, particularly under the unstable conditions in Palestine. The legal definition and interpretation of the events may vary from country to country, and from one jurisdiction to another, which will accordingly lead to different legal consequences. Therefore, most standard forms, including FIDIC and NEC, cover these matters by express terms (Eggleston, 2006; Jaeger and Hök, 2010). FIDIC clause 19.1, defines *force majeure* events to be:

- beyond a party's control,
- could not reasonably be provided against before entering into the contract,
- having arisen, could not reasonably be avoided or overcome, and
- are not substantially attributable to the other party.

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Indeed, clause 19.1 provides a non-exhaustive list, including events such as war, terrorism, riots, and natural disasters. The above definition of a *force majeure* event is entirely open-ended, such that a human-caused event would be covered if it met the above criteria. This gives more risk to the employer as he bears the cost and time impacts (Swiney, 2007). Jaeger and Hök (2010) criticise the ambiguity of the extent of the contractor's entitlement to an extension of time, and loss and expense, as to whether it covers direct and indirect consequences of the event. It is worth mentioning that a *force majeure* event does not need to pass the "unforeseeability" test. This means even if an event is foreseeable, it will be considered *force majeure* as long as it is beyond the control of the parties (Jaeger and Hök, 2010).

NEC 3 has introduced a new clause (clause 19.1) called "prevention" under which the employer bears the time and cost risks of events similar to, but potentially wider than, *force majeure*. Clause 19.1 defines a prevention event as an event which:

- stops the contractor completing the works, or
- stops the contractor completing the works by the date shown on the accepted programme, and
- neither party could prevent, and
- an experienced contractor would have judged at the contract date to have had such a small chance of occurring that it would have been unreasonable to have allowed for it

Eggleston (2006) criticises this clause as it opens the door for a very wide interpretation because its definition goes well beyond what is adopted in law as "*force majeure*". For instance, a contractor may argue that insolvency of suppliers or the supply of defective materials, works and designs by others had a small chance of occurring and could not have been prevented by either party. He also critiques the words "small chance" and "unreasonable" which are difficult tests to examine in dispute resolution proceedings, and would indicate the event to be one of "prevention" even though it was foreseeable, the same as FIDIC. Furthermore, the "prevention" clause seems to apply to delay events which are endemic and it does not make sense that the clause operates for each and every delaying event (Eggleston, 2006).

To sum up, both FIDIC and NEC share the same philosophy of transferring the risk of *force majeure* events to the employer to avoid padding the tender prices by contractors. It appears that both FIDIC and NEC fail to provide a decisive and conclusive definition of what constitutes a *force majeure* or prevention situation. The problem with the *force majeure* definition is that people do not know what might happen so they always struggle to define it. This could cause disputes as a notice of *force majeure* would be rejected by the defendant denying the existence of this event, and in turn suing the claimant or plaintiff for a breach of contract. Bunni (2005) states that not covering these exceptional events in the conditions of contract, and leaving them to the applicable law in the relevant jurisdiction would reduce the likelihood of conflicts. However, not covering them at all will make the resort to litigation inevitable, which is not desirable.

2.3 Variations

According to Seppala (1991), the inevitable variations are the second major area giving rise to claims under FIDIC. FIDIC is unable to cope with significant variations because it is essentially a re-measurement contract that assumes the project scope is well defined prior to letting the tender documents. FIDIC Sub-clause 12.3 limits variations of items to 10% by quantity and other criteria which necessitate new rates to be agreed (FIDIC, 1999). The process of determination of the new rates, whereby a contractor submits a proposal and then the engineer determines suitable prices, is a rigorous and tough process that inevitably will lead to disagreement and dispute.

FIDIC details that a change is to be valued at the same or by considering rates and prices set out in the contract, or the engineer agrees new suitable rates and prices through the procedure of "due consultation" with the employer and the contractor. If no agreement is reached, the last resort is determining the appropriate prices by the engineer. This procedure assumes that the value will be calculated after the variation or change has been carried out (FIDIC, 1999; Forward, 2002).

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On another hand, FIDIC introduces a new innovation allowing variations under a "Value Engineering" clause. The contractor may submit a proposal, which needs the approval of the engineer to proceed, to increase efficiency, reduce cost and time etc. to the benefit of the employer (FIDIC, 1999). Obviously, this feature encourages collaboration and partnering, and it should have been introduced within NEC.

Normally, standard forms make it clear via express terms that the contractor is obliged to perform variations. NEC does not recognise the phrase "variations" or "changes", but addresses them indirectly through Clause 14.3 (Instructions) which serves as the variation clause (Eggleston, 2006). Although there is no explicit limit to changes, Clause 12.3 tends to limit them by stating that no change to the contract has effect unless it is provided for in the conditions of contract or unless it has been agreed, confirmed in writing, and signed by the parties (Eggleston, 2006).

NEC provides for pre-pricing a variation/change before it is carried out. This means that the instruction - variation order or change order - by the client will at first be an instruction to submit a price (quotation) for the work, which, if accepted, will be followed by an instruction to carry out the work (Eggleston, 2006). This is beneficial for both parties. The client can decide whether to go ahead or not based on the price. The contractor ensures the price of the work is accepted and thus avoids disputes. Yet, the drawback of the NEC system could be a delay in reaching an agreement on the price, and in turn a delay to the project activities.

In summary, FIDIC tries to avoid disputes by minimising variations to a certain limit after which a new process should be agreed. However, the process of price determination is still problematic. On the other hand, NEC is very flexible as it does not limit variations, but it requires pre-pricing and quotations that fix the prices before commencing the variation. Overall, it is obvious that both use different approaches to tackle the same problem, but NEC tends to be more successful, as what really does matter, at the end of the day, is price agreement and not the 10% limit on quantity or some other constraint.

2.4 The role of the Engineer versus the Project Manager

The aim of this section is to critically examine and compare the role of the engineer under FIDIC with the project manager under NEC.

Under the FIDIC's old Red Book, the engineer has two main duties. Firstly, he is the employer's agent for design, supervision of the works' construction and execution, and contract administration. Secondly, he is a neutral and independent third party responsible to decide and determine the contractor's claims for additional payment or extensions of time, and to resolve disputes fairly between the contractor and the employer (Seppala, 1991).

The employer is responsible for the engineer's default in the first group of duties and in turn may be in breach of contract, but he is not responsible for the engineer's performance in respect of the second group of duties, except in the case of total failure to perform these duties. The duality of role of the engineer as the employer's agent and a neutral third party is much criticised because of the conflict of interests in his duties. For example, the engineer may be the cause of problems like design errors and delay in making decisions. Moreover, he is appointed and paid by the employer and may seek future work with him, or at least avoid being sacked (Ndekugri *et al.*, 2007; Seppala, 1991).

NEC resolves these problems, or tries to resolve it, by splitting the engineer's role into four entities; the project manager, supervisor, designer, and adjudicator. All these roles are agents of the employer except the adjudicator. The project manager is required to make the plans, administer the contract, certify and value payments etc with a main mission to get the project delivered on time and within budget. The supervisor is concerned with the quality of works and defects. Those two roles can be combined and occupied by one person (Eggleston, 2006). It is important to keep in mind that the new roles of the engineer under NEC, compared to other forms, would encourage engineers not to recommend such a standard form that considerably reduces their own authority and workload (Lavin and Potts, 1998).

The project manager is the representative of the employer and works on his behalf. There is no express requirement on NEC provisions obligating the project manager to be impartial. However, some routine tasks and activities such as issuing certificates, and valuing compensation events seem to require impartiality and fairness. As a certifier and valuer, the project manager shall not work to secure the employer's interests. This was emphasised in the unusual case of *Costain Ltd and Others v. Bechtel Ltd* (2005), in which the judge made the decision that the project manager's duty is to act fairly and impartially when acting as a certifier (Eggleston, 2006). This case shows that the role separation is not as simple as appears on the face of it.

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Under the new Red Book, there is an attempt to abandon the "independent engineer" concept. This appears from three changes: removing the requirement to "act impartially", expressly stating that the engineer is to act as the employer's agent, and introducing the Dispute Adjudication Board (DAB) to which the parties may refer any dispute. It is important to view the development and changes of the contract holistically. The non-neutral engineer and DAB are closely related and have been introduced as one package (Swiney, 2007). Certainly, this has significantly reduced the dispute resolution role and power of the engineer (Ndekugri *et al.*, 2007).

The total abandonment of the "independent Engineer" concept is questioned since it replaces the duty to "act impartially" by the duty to make "fair determinations" of the claims between the employer and the contractor, which appears to reinstate the old concept. However, a new mechanism to allow the employer to regain control over the engineer is introduced in clause 3.1. This is achieved by stating that the engineer is to act as the employer's agent in the Particular Conditions. Furthermore, unlike the old Red Book, the new Book empowers the employer with express authority to replace the engineer for any reason whatsoever, subject to two procedural requirements (Ndekugri *et al.*, 2007).

Lina (1997) argues that although the dual role of the engineer should be abandoned, the new FIDIC and NEC approaches are less efficient than the traditional system. For instance, the NEC approach of separating the duties of the engineer to multiple people or firms ignores the consistency gained by one party working over the whole project life cycle from project inception to completion. Also, the engineer's knowledge of the project's day-to-day activities enables him to make decisions better than the DAB or adjudicator. In addition, the interference of the DAB or adjudicator may create a confrontational rather than a cooperative environment and in turn increase claims, especially as the engineer no longer has an obligation to act impartially. Finally, the additional fees payable to the DAB or adjudicator make the works more expensive (Lina, 1997).

Summarising, the new Red Book has moved towards the NEC approach to dispose of the independent engineer concept. However, FIDIC has not gone all the way because the duality of engineer's role has not been eliminated completely. Arguably, this is favourable as the new Red Book is structured flexibly enough to serve the requirements of different parties (Ndekugri *et al.*, 2007).

3. Conceptual Framework

This research is of a qualitative nature because it aims to induce the relationship between the choice of a standard contract and contractual disputes. The research method depends on reviewing the literature and conducting interviews.

The variables or units of analysis in the theoretical framework of this research are the FIDIC and NEC standard contracts and construction disputes. The main assumption here of the interaction between the variables is that the choice of the contract has a direct effect on the disputes between construction parties. In other words, the contract is the independent variable whereas the dispute is the dependent variable. The proposition here is that NEC may minimise disputes. The validity of this proposition will be investigated by surveying the opinions of practitioners through interviews.

4. Interviews

The interview questions were built with the proposition that knowledge about FIDIC is expected, but no prior knowledge about NEC is assumed. The interviews were conducted via Skype, which gives almost the same atmosphere of a face-to-face personal interview because of the inclusion of video communication. The average interview duration was 85 minutes. Selected "expert" sampling has been followed in this research. This involves selecting people who have expertise in the research topic, which is in this case is construction contracts, especially FIDIC.

The data is obtained from twelve semi-structured interviews with eminent professionals in the Palestinian construction industry. The interviewees fall under the following job titles or positions: project manager, technical manager, executive manager, procurement/ contract manager, programme manager, academic and arbitrator. The interviewees have been selected with the intention in mind to be as diverse as possible. Therefore, it is very likely to obtain diverse and various opinions and experiences that may disagree on many issues. This should be viewed as a healthy debate giving rise to more rounded conclusions, and covering the topic in a holistic view from many angles. The interviewees represent the client/owner/employer organisation, the contractor company, engineering and consulting firms, and development agencies. In addition, the researchers have interviewed people of different genders, different ages and experiences. The range of experience ranges from 8 years to 30 years.

5. Results and discussions

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4.1 Clarity and Simplicity

The respondents were asked to describe the clarity, readability, understanding, interpretation and certainty of meaning of FIDIC clauses.

There was a clear disagreement regarding the degree of clarity, but all respondents argued that FIDIC is not clear enough. The interviewees maintain that FIDIC's extensive cross-referencing and many very long sentences, separated by commas reduce the readability and the understanding.

Further they think the lack of clarity, or the difficulty in understanding, which either lead to various interpretations of the contract comes from the fact that almost all of its users are engineers not schooled in law, while the contract was drafted by lawyers using very legalistic language. Further, the fact that the contract users are non-native English speaking brings more difficulties as to the need to understand the ordinary meaning of the words/phrases and the legal meaning that usually is built on a legal tradition of long case law particular to the country of origin. They think the use of Arabic version is very useful especially for first-time users; however, it is not a panacea. This is mainly because of the potential problem of deviation or distortion of the meaning when translating legal terms and phrases to other languages, particularly if this is combined with different legal systems. It seems that the simple and plain English of NEC helps to reduce disagreements and disputes resulting from the FIDIC's legal and obscure wordings. Also, the translation of NEC to Arabic would be much easier and clearer than FIDIC because of its ordinary language.

Also, they state that FIDIC uses phrases which are uncertain in meaning and could have more than one interpretation such as "*in the contractor opinion*", "*unforeseeable*", "*exceptional*", "*experienced contractor*", "*physical conditions*".

In the allocation of ground conditions risk, FIDIC uses a "*foreseeability*" test ("*unforeseeable for an experienced contractor*") whereas NEC uses a "*probability*" test ("*have a small chance of occurring*"). Although some authors criticise both expressions as being uncertain and slightly different approaches (Eggleston, 2006; Ndekugri and Mcdonnell, 1999), FIDIC's foreseeability test appears to be more problematic because it is undertaken only after the occurrence of the event i.e. the test calls for an assessment *ex ante*. Psychologically, it is next to impossible to ignore this ex-post knowledge and therefore this retrospective investigation to determine what was foreseeable and what was not suffers from the notorious "hindsight bias" (perceiving past events to have been more predictable than they actually were). Almost all the interviewees expressed their discomfort with this test. Some interviewees stated that the 'foreseeability' test is defective and judgements on the foreseeability of events are unpredictable, a pure gamble or a speculative exercise. Another interviewee criticised the essence of how FIDIC treats the concept of foreseeability as a binary either-or construct, whereas in fact it is a continuum from ultimate uncertainty to inevitable certainty. So, where the dividing line between foreseeable and unforeseeable lies?

In the allocation of weather conditions risk, FIDIC uses a subjective test ("*exceptionally adverse climatic conditions*") whereas NEC uses an objective statistical test (weather conditions which occur "*average less frequently than once in ten years*"). The judgment on whether the conditions are "exceptional" is inherently subjective and hence leads to disputes on its interpretation.

One participant says that "*experienced contractor*" is a "hollowed out and meaningless phrase". The elasticity of the phrase comes from fallacies such as the failure to assign objective threshold of time-based experience or number-based experience of similar-projects or similar-tasks, and the failure to distinguish between the experience of the organisation itself, and the experience of its staff. Sometimes, new organisations hire staff with lengthy experience in order to claim "expertise" but then form teams which suffer from low

or similar-tasks, and the failure to distinguish between the experience of the organisation itself, and the experience of its staff. Sometimes, new organisations hire staff with lengthy experience in order to claim "expertise" but then form teams which suffer from low performance. On the other end of the scale, old construction companies with an extensive past experience may be in a situation whereby most of its staff that implemented the past similar projects left the company, and is left with juniors of minimal experience. Is there a room to distinct between the organisational learning and individual learning? Further, does the expertise of the project team or the expertise of organisation's head-office staff matter? It is unknown. Therefore, the concept of "*experienced contractor*" is entirely uncertain in meaning, and its interpretation will likely be a lottery that depends on the discretion of the tribunal deciding the dispute. The participant suggests linking the concept to the prequalification requirements in terms of detailed criteria covering financial and technical strength, experience in similar projects, similar key activities, head office personnel and project team etc.

Four respondents propose to use more specific terms and to attach objective values to the risk events such as rainfall duration and intensity, wind speed, earthquake degree etc. Others propose to provide illustration or commentary about such vague phrases, and to supplement the contract with guidance on its interpretation.

4.2 Risk Allocation and Management

The respondents were asked if they think risk allocation clarity or fairness or both, would be major causes of disputes, and then if they think FIDIC adopts fair and clear risk sharing principles.

The interviewees disagree about the clarity (that is part of the clarity of the overall document) and fairness of FIDIC risk sharing, and this disagreement is shared by engineers and contractors.

Ten interviewees agree that disputes will arise if risk allocation is unclear. This is because arguments will occur over who bears which risks. The parties will blame each other, and will keep searching for ways to support their contractual position. This is simply because either party will be unhappy to pay money. However, two people say that even if risk allocation is clear, contractors continue to make claims. The clarity of the risk allocation, as part of the clarity of the whole contract, is discussed in section 5.1 Clarity and Simplicity

On the other hand, the interviewees disagree about fairness and disputes. While eight respondents say that if risk allocation is unfair and unrealistic, this will inevitably lead to disputes, others argue that this affects bid price and not claims or disputes. Yet, some participants maintain that fairness does not usually result in higher prices, as contractors usually use zero overhead, because they are working in a very highly competitive market with a desperate need to work. One interviewee refers to this situation as a prevailing "*claim-hunting culture*" which means a contractor offers a price based only on the direct "*dry*" cost, and then depends on claims to make profit. Obviously, such unjustified claims create disputes. Therefore, it can be argued the unfair risk allocation creates disputes in an indirect way (backdoor form of dispute creation).

Seven interviewees say that FIDIC is well-balanced, fair or relatively fair in that FIDIC views parties as partners. They gave some examples such as *force majeure* and termination clauses, clause 17 (Risk and Responsibility), and clause 18 (Insurance) that provide fair contracting principles. Also, they believe that the claim procedure allows contractors to be compensated fairly.

Five interviewees feel that FIDIC is or tends to be unfair because it shifts most of the risks to contractors, except for a few things such as employer's risks and *force majeure*. Many of the risks shifted towards contractors are illogical because they are weaker than clients to bear certain risks. Hesitantly, they gave some examples such as the weather conditions risk clause that gives an entitlement to only time compensation. They referred also to clauses that provide for compensation only if the risky events are unforeseeable, but the *de facto* result is that the Employer and the Engineer consider the risky events to be foreseeable and hence contractors ultimately bear the risk of ground conditions, shortage in the availability of materials and so on.

5.3 Force majeure and Prevention Events

Eight interviewees say that *force majeure* is one of the most dispute generating clauses because of its lack of clarity. For instance, one interviewee states that it is unclear whether an "insurrection" constitutes *force majeure*, and the parties kept arguing over this word for one year! Also, after the tightening of the blockade on Gaza by Israel, there were many arguments about whether this constitutes *force majeure* or not as the outcome would cost certain

"insurrection" constitutes *force majeure*, and the parties kept arguing over this word for one year! Also, after the tightening of the blockade on Gaza by Israel, there were many arguments about whether this constitutes *force majeure* or not, as the outcome would cost certain organisations a large amount of money.

Moreover, some local employers delete the provisions of *force majeure*. They argue that most of the events that are included under this clause, such as war, hostilities, unrest etc. have become normal things and circumstances in Gaza. Nevertheless, the authors believe that deleting this clause just because a *force majeure* event has become normal or foreseeable is illogical. This is because the main part of the definition of such an event is being out of the control of either party even if it is foreseeable. Thus, allocating this risk to the contractor is a default practice with devastating consequences on bid price or final project cost, and definitely disputes, and may result in project failure.

Quite often, the contractor is the "victim" as he must bear the financial consequences of these events, because employers have a strict and limited budget for each project. Employers try to cooperate or share some aspects of these risks by granting an extension of time so that contractors are not liable to pay liquidated damages.

4.4 Variations

The interviewees were asked if they think variations are a major source of disputes and why. There was disagreement between the respondents about this issue. Some argue that variations often lead to disputes, while others claim that variations very rarely cause disputes. Another group stands in between and says disputes sometimes happen, particularly when a variation order requires new prices or rates to be agreed. This disagreement between the interviewees may be because of the different definition and perception of what constitutes a dispute. Possibly, some consider that a rejection or disagreement about the first quotation is a dispute, while others consider a dispute arises when disagreements occur after signing and agreeing the variation price.

The common practice in Palestine is to agree the price of the varied work before commencing the works. However, contractors sometimes start working before agreeing the price to avoid delaying the project. Some people think that FIDIC is flexible in this way and does not oblige pre-pricing or post-evaluation. Instead, FIDIC obliges the contractor to commence the work even if the price of this work has not been agreed. It has been shown by the majority of interviewees that disputes are usually avoided when they follow the pre-pricing route. One contractor states that sometimes disputes arise even if a schedule of cost components and analysis of the price breakdown structure are provided. The arguments arise over the value of direct cost, and overhead percentage and so on. This conflict of interest is normal because contractors consider a variation to be opportunity to make profit, while employers want to adhere to the rates defined in the bill of quantities. All in all, this clearly indicates that the NEC approach is much better than FIDIC's approach to avoid disputes in the area of variations.

It has been shown that disputes do not only arise from disagreement about evaluation of the impact of the variation, but also from the definition of variation. In some cases, the engineer instructs the contractor to do certain work, which falls outside the contract and thus constitutes a variation in fact, but refuses to acknowledge that his order constitutes a variation. While at other times, the contractor attempts to "make up" variations by delaying the progress or sequence of works, or otherwise, which necessitates new work. Also, contractors may argue that a normal instruction which does not constitute a variation, to be variation.

4.5 The role of the Engineer vis-à-vis the Project Manager

The interviewees were asked whether they think the duality of the role of the Engineer (being the client agent and, at the same time, the independent third party to determine matters fairly between the employer and the contractor) is efficient or problematic and why. At the same time, they were asked if they prefer the Engineer to be the adjudicator of the disputes between the employer and the contractor and why.

Again, the respondents have different views about this matter. While three engineers defend this role, two engineers, and all other respondents (employers and contractors) criticise this role.

The proponents claim that the engineer knows "the nuts and bolts" of the project and contract documents. They argue that if the role is divided into design, supervision, contract administration and adjudication this will lead to inconsistency, misinterpretation of contract documents, and may result in significant "rework" because each entity needs to understand the work done by others. Furthermore, in case of dispute, they think the engineer is in a better position to make the correct decision because he will interpret the contract documents correctly and because of his day-to-day knowledge of the project progress and works.

the work done by others. Furthermore, in case of dispute, they think the engineer is in a better position to make the correct decision because he will interpret the contract documents correctly and because of his day-to-day knowledge of the project progress and works.

Four interviewees say that this role is not problematic in nature, but its efficiency depends on the professionalism and expertise of the engineer. The engineer who is required to do all these tasks must be very experienced to recognise, distinguish and split which tasks require him to be agent, and which require him to be independent. Whether the engineer shall be the adjudicator is a mere matter of experience and not basically about trust and honesty. This is because experienced engineers consider it dishonourable and disreputable to make wrong or biased decisions. One interviewee states that he prefers the engineer to be a member of the DAB, but not the sole member.

The rest of respondents, five interviewees, argue, giving different reasons, that the role is problematic, theoretical and not practical and combines conflicting roles. Engineers may make things personal and do not understand their roles properly, what is required from them and what their lines of authority and power, rights and obligations are. The interviewed contractors told “horror stories” of the abusive and oppressive behaviour of some Engineers. In their experience, this reaches its maximal limit when the Engineer (performing the supervision, contract administration, and dispute resolution functions), is also the designer of the works. This combination of roles is not uncommon in Palestine and it is next to impossible for the Engineer to hold itself guilty and hence awards the contractor compensation for the defective design, or inconsistent contract documents, or faulty specifications from the pocket of his employer. It is just nonsense! An example for this, as stated by an interviewed contractor, is that when the Engineer is aware of his contract administration pitfalls, delayed decisions on approval requests, delayed responses on RFIs etc. may award compensation for the contractor but on neutral grounds such as delays because of weather conditions or events outside of the control of the project parties. The interviewed contractors say that employers and engineers sometimes appear to change or swap their roles, which clearly indicates they behave as one party. An interviewed employer admits that in some cases the engineer becomes part of the problem, and then ironically the Employer intervenes to settle the controversies between the Engineer and the contractor. In addition, it is not unusual to find in construction contracts that the Engineer and the Employer are the same organisation. Therefore, it is against the natural justice to make a party the judge in its own cause or in a case in which it has an interest.

The impartial role of the Engineer in performing the functions of certification, valuation and dispute resolution has often been misunderstood or viewed with great scepticism by practitioners in Palestine. The prevailing attitude is that engineers are the agents or the representatives of employers, and in case of dispute, the engineer will not attempt to, or will feel embarrassed to blame the person who pays him. Therefore, engineers tend to be consciously or subconsciously biased and partial, and hence cannot be reliable and trusted adjudicators. The prevailing adversarial culture between contractors and engineers in Palestine, as the available literature suggests, is an imperative obstacle to the adjudicatory role of engineers.

5 Conclusion

This study set out to assess the role of the standard form of contract, FIDIC or NEC in particular, in dispute minimisation. The main results and findings suggest that both contracts have commendable and desirable features for all parties. However, there are certain areas of concern and sometimes limitations in both contracts.

NEC has probably many advantages over FIDIC particularly in clarity, risk management, and variations. The authors argue that these advantages or benefits are for all parties to a construction contract because disputes minimisation is a matter of mutual interest.

The position of the engineer/project manager has benefits and limitations in both contracts; however, it seems the project manager role under NEC is more sensible in Palestine. This is primarily because of the adversarial relationship and lack of trust between contractors and engineers and the conflict of interests which makes it more reasonable to separate the impartial and neutral role of dispute adjudication from the supervisory and contract administration role in which the Engineer works as the client's agent.

The force majeure or prevention provisions are inconclusive in both standard forms, a challenge that arise from the inherently uncertain nature of these events.

On the other hand, FIDIC has the advantages of familiarity and precedence, widespread popularity, and endorsement by many governments, development banks and institutions, and major employers in Palestine and worldwide.

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In a nut shell, the standard form of contract can be a tool to “minimise” disputes, but certainly not to eradicate them, and NEC appears to be more capable than FIDIC to do so. The standard form of contract provides the regulatory regime for the parties’ relationships, roles and responsibilities. The more fair and clear the regulations, the less room available for disputes. Clarity necessitates a move from subjectivity to objectivity, from abstraction to comprehensiveness, from generalisation to particularisation. This definitely helps in shrinking the margin of contract’s incompleteness and uncertainties. Although the "theory of contracts" is incapable to cope with the challenges of "uncertainty", risks are also problematic. Risks are those events that may or may not occur. They can be assigned probability values and hence undergo a probability test (NEC term) or a foreseeability test (FIDIC term). Although NEC’s objective approach is a remarkable improvement compared to FIDIC’s subjective approach, it is probably still vulnerable to different interpretations

The aforementioned discussions illustrate the boundaries and the extent of the contract capability to tackle disputes. It is the opinion of the authors that the significant sources of disputes are the users of the contracts and not the contracts themselves. Nevertheless, there is no clear demarcation line between the shortcomings of the standard form of contract, and the pitfalls of people. To give one example, the issue of clarity may be attributed to the contract's drafting or to the user's lack of knowledge and experience to understand the contract. Such arguments are expected to go on and on.

Reference List:

Abedmoussa, M. 2008. Construction Claims in Palestine. School of Engineering Department of Civil Engineering MSc Construction Management Thesis submitted to the School of Civil Engineering, University of Birmingham.

Abrahamson, M. (1979). Engineering Law and the ICE Contracts. 4th. ed. London: Applied Science.

Barrett, K. (2003). Measureing the Weather: A fair case for compensation. NEC Users' Group Newsletters. 27, pp.4-5.

Broome, J. and Hayes, R (1997). A comparison of the clarity of traditional construction contracts and of the New Engineering Contract. International Journal of Project Management. 15(4), pp.255-261.

Brown, S. (2000). Let’s get Contractual ! .NEC Users' Group Newsletters. 12, pp.3-3.

Bunni, N. (2005). The FIDIC Forms of Contract. 3rd. ed. Oxford: Blackwell Publishing Ltd.

Cheung, S. O. & Pang, K. H. Y. 2012. Anatomy of construction disputes. Journal of construction engineering and management.

Chong, H., Zin, R. (2009). A case study into the language structure of construction standard form in Malaysia. International Journal of Project Management. 28, pp.601–608.

Cox, A. and Thompson, I. (1996). Is the NEC going to succeed? - An examination of the engineering and construction contract. The International Construction Law Review. 13(3), pp.327-337.

Cutts, M. and Maher, S. (1986). The Plain English Story. 1. ed. Whaley Bridge: Plain English Campaign.

Eggleston, B. (2006). The NEC 3 Engineering and Construction Contract A Commentary. 2nd. ed. Oxford: Blackwell Science.

El-Sawalhi, N. & El-riyati, A. 2015. An Overhead Costs Assessment for Construction Projects at Gaza Strip. American Journal of Civil Engineering, 3, 95-101.

Enshassi, A., Choudhry, R. M. & EL-Ghandour, S. 2009. Contractors’ perception towards

El-Sawalhi, N. & El-riyati, A. 2015. An Overhead Costs Assessment for Construction Projects at Gaza Strip. *American Journal of Civil Engineering*, 3, 95-101.

Enshassi, A., Choudhry, R. M. & EL-Ghandour, S. 2009. Contractors' perception towards causes of claims in construction projects. *International Journal of Construction Management*, 9, 79-92.

Enshassi, A., Kumaraswamy, M. & Nairab, S. 2010. Analysis of contractors' bidding decision in the Palestinian construction industry. *Revista Ingenieria de Construcción (Journal of Construction Engineering)*, 25, 161-214.

Enshassi, A., Al-Hallaq, K. and Mohamed, S. (2006). Causes of Contractor's Business Failure in Developing Countries: The Case of Palestine. *Journal of Construction in Developing Countries*. 11(2), pp.1-14.

Enshassi, A., Mohamed, S., and El-Ghandour, S. (2009). Problems associated with the process of claim management in Palestine: Contractors' perspective. *Engineering, Construction and Architectural Management*. 16(1), pp.61-72.

Fenn, P. (2007). Predicting construction disputes: an etiological approach. In: *Proceedings of the ICE - Management, Procurement and Law*. 160(2), pp. 69 –73.

Fenn, P., Lowe, D. and Speck, C. (1997). Conflict and dispute in construction. *Construction Management Economics*. 15(6), pp.513-518.

FIDIC (1999). *Conditions of contract for construction: for building and engineering works designed by the employer : general conditions : guidance for the preparation of particular conditions : forms of letter of tender, contract agreement and dispute adjudication agreement*. Lausanne: F d rationInternationale des Ing nieurs-Conseils.

Forward, F. (2002). *The NEC compared and contrasted*. 1. ed. London: Thomas Telford.

Glover, J. (2008). FIDIC an overview: the latest developments, comparisons, claims and a look into the future. 2 September 2008. *Contract issues archive* [online]. [Accessed 02 July 2012]. Available from: <<http://www.fenwickelliott.com/research-insight/articles-papers/contract-issues/archive?page=1>>.

Gould, N (2007) *NEC3: The Construction Contract of the Future*. Singapore: Society of Construction Law.

Harmon, K. (2011). To Be or Not to Be—That Is the Question: Is a DRB Right for Your Project? *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*. 3(1), pp.10-16.

Heaphy, I. (2011). NEC3 v. FIDIC. *NEC Users' Group Newsletters*. 55, pp.5-6.

Hillig, J., Dan-Asabe, D., Donyavi, S., Dursun, O., Thampuratty, A. (2010). FIDIC's Red Book 1999 Edition: A Study Review. *Proceedings of the Institution of Civil Engineers-Management, Procurement and Law*. 163(3), pp.129–133.

Hughes, W. and Greenwood, D. (1996). The standardization of contracts for construction. *International Construction Law Review*. 13(2), pp.196-206.

Hughes, W. and Maeda, W. (2002). Construction contract policy: do we mean what we say?. *RICS Research Paper*. 4(12), pp.1-25.

Jaeger, A. and Hök, G. (2010). *FIDIC-A Guide for Practitioners*. 1. ed. Heidelberg: Springer.

Klein, R. (2010). Time to zap those zany Z clauses. *NEC Users' Group Newsletters*. 51, pp.2.

Kozek, J. Heberd, C. (1998). Contracts: share the risk. *Journal of Construction Engineering and Management*. 111(2), pp.356–361.

Lavin, M. and Potts, K. (1998). Response to the New Engineering Contract - a review of experts observations on this radical new contract. In: *Construction and Building Research Conference (COBRA) 1998*, 2-3 September 1998, Oxford Brookes University. pp. 1-9

Li, M. (2006). *New Engineering Contract (NEC) 1993 as Radical Changes to the Malaysian Standard Forms of Contract*. M.Sc. Thesis, Universiti Teknologi Malaysia.

Lina, C. (1997). Role of Engineer under FIDC Form Contract. *Journal of Professional Issues in Engineering Education and Practice*. 123(2), pp.48-50.

McInnis, A. (2001). *The New Engineering Contract: a legal commentary*. 1. ed. London: Thomas Telford.

Ndekugri, I and McDonnell, B (1999). Differing site conditions risks: a FIDIC/engineering and construction contract comparison. *Engineering, Construction and Architectural Management*. 6(2), pp.177-187.

Ndekugri, I., Smithb, N., and Hughesc, W. (2007). The engineer under FIDIC's conditions of contract for Construction. *Construction Management and Economics*. 25, pp.791–799.

Omoto, T. (2002). Bargaining model of construction dispute resolution. In: *Systems, Man and Cybernetics, 2002 IEEE International Conference on*, 6-9 October 2002, Tokyo. pp. 6-12.

Osinski, C. (2002). *Delivering Infrastructure: International Best Practice-FIDIC Contracts: A Contractor View*. Society of Construction Law.

- Osinski, C. (2002). *Delivering Infrastructure: International Best Practice-FIDIC Contracts: A Contractor View*. Society of Construction Law.
- Potts, K. (2008). *Construction Cost Management-Learning from case studies*. 1. ed. Abingdon: Taylor & Francis.
- Robinson, M. (2011). *A contractor's guide to the FIDIC conditions of contract*. 1. ed. Hoboken: Wiley-Blackwell.
- Seifert, B. (2005). International construction Dispute Adjudication under International Federation of Consulting Engineers Conditions of Contract and the dispute Adjudication Board. *Journal of Construction Engineering and Management*. 131(2), pp.149-157
- Seppala, C. (1991). Contractor's Claims under the FIDIC Civil Engineering Contract, Fourth (1987) Edition. *International Business lawyer*. 19, pp.457-460.
- Swiney, G. (2007). The Dubious Upgrade of International Development Contracts. *International Law and Management Review*. 3(2), pp.145-170.
- Thompson, R. M., Vorster, M. C., and Groton, J. P. (2000). Innovations to Manage Disputes: DRB And NEC. *Journal of Management in Engineering*. 16(5), pp.51-59.
- Valentine, A. (1996). *The NEC engineering and construction contract: a user's guide*. London: Thomas Telford.
- Wassenaer, A. (2009). The 'Big Risk Game' - a simple tool to understand project risks and work together better. *Construction Law International*. 4(3), pp.1-4.
- Williams, D. (2001). Choosing the contract form a project or business decision? *NEC Users' Group Newsletters*. 17, pp.6.
- Wydick, R. (1978). Plain English for lawyers. *California Law Review*. 66, pp.727-765.