# Quantitative Model for the Systematic Evaluation of Standard Form of Civil Engineering Contract

**Sim Nee Ting, Chee Khoon Ng**

*Abstract*: ***This research presents a quantitative model for standard-form review that is systematic and concise with the aim to reduce dependency on individuals' opinions and the subjectivity in standard-form review. Construction industry in Malaysia has always has a heavy reliance on the standard-forms of contract as its General Conditions of Contract to outline the obligations and the rights or the parties contracting in civil engineering projects. However, according to the literatures available, the existing forms and all their subsequent revisions are still falling short in certain areas. Studies on standard form including those of form revisions are typically conducted qualitatively and in a rather random manner but the search for contractual documents idealization still remains. In this research, eight (8) attributes for standard form study and their relevant parameters were selected. A structured questionnaire survey was done to establish the rankings of these attributes and their importance weighting, $W_i$. Then, a structured technique to evaluate the clauses based on the Level of Adequacy, $A_i$ against the number of problematic issues, is designed for form reviewer to evaluate each clause. Each clause in the standard-form will have a final Total Evaluation Score (TES). Magnitude of Evaluation of TES is designed to check the magnitude of positivity or negativity of the clauses. It is hoped that with a structured and quantitative model for form evaluation, both the positive points and conversely the problematic areas and issues in standard-forms of contract, not only in Malaysia but worldwide, can be determined in an objective manner, which in turn enhances future form drafting and revisions in the quest for an 'ideal' form.***

***Keywords*: Systematic, Quantitative, Standard-Form, Review, Engineering, Contract**

## I. INTRODUCTION

All engineering construction projects in Malaysia are carried out with a contract, where it is governed by the Malaysian Law of Contract. All parties contracting are to abide the contract, which they have on their free will embarked onto. An engineering contract can be defined in various ways. A contract in engineering and construction signifies a meeting of mind between individuals who have agreed upon a transaction. This agreement will give rise to responsibilities/obligations, which then allows the other party to exercise their rights in the contract. In the case of a construction contract, it is a legally binding agreement that binds both the Client (the paymaster of the said works) and the Contractor who agree to carry out the said works in return for the specific amount of monetary compensation from the Client. The contract also includes how the compensation will be distributed (Rodrigeuz, 2019).

Construction contracts can vary depending on the types of works and the method of procurement selected. The selection of the contract type depends on the basis of pricing and the contracting strategy that best meets the project objectives (Tatarestaghi et al., 2011, Urquhart & Whyte 2018).

According to Singh (2009), the documentations which constituted the contract documents, which form the main content in construction contracting in Malaysia, are given as follows:

i. Conditions of contract (General and Special)
ii. Agreement or articles of agreement
iii. Appendix to the conditions
iv. Bill of quantities
v. Technical and Material Specifications
vi. Schedule of rates
vii. Drawings and plans
viii. Design and build documents
ix. Work program and/or work method statement
x. Miscellaneous

Bubshait and Almohawis (1994) also mentioned that one of the important (if not the most important) part of a construction contract is the General Conditions of Contract. This is because the General Conditions document first and foremost seeks to define the relationships (obligations and rights) of the parties contracting in construction projects. Furthermore, this document registers the general rules and regulations of the project with respect to the relevant commercial terms.

General Conditions of Contract in Malaysia is generally in a form of a standard printed documents. It is usually published by an authoritative or professional body from the construction industry that is recognized by both the contracting parties. The document is referred to as the standard-form of contract. Robinson and Lavers (1988) points out that most of standard-forms of contract are commissioned by specific government agencies for use in the contracts they funded, or by a professional body that has taken upon itself to represent its private sector clientele.

The engineering and construction industry in Malaysia, although small in its relative size uses a variety of standard-forms of contract. The most commonly used standard-forms of contract used in construction and engineering are drafted by a few key public-authorities and professional bodies (Ali, 2006). They are namely:

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