Assess Effectiveness of TIA Method in Forensic Delay Analysis in Construction Projects

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Research

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This dissertation was submitted to the Faculty of Engineering of University of Moratuwa in partial fulfilment of the requirements for the Degree of MSc in Construction Project Management

DECLARATION

I confirm that, except where indicated through the proper use of citation and references, this is my own original work. I also confirm that my work include in this dissertation in part or whole has not been submitted for any other academic qualification at any institution. Further, I confirm that subject to final approval by the Board of Examiners of University of Moratuwa, a copy of this dissertation may be placed upon shelves of the library of the University of Moratuwa and may be circulated as required.

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30th March 2015

The above particulars are correct to best of my knowledge.

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ABSTACT

Results of delay analysis is the basis of many claims related to time and money of the construction projects. Results of delay analysis vary depending on the person how perform the analysis, delay analysis method, nature of data available, and many other subjective parameters associate with delay analysis. There is no delay analysis method specified in any standard condition of contracts. Therefore the selection of more suitable method is a liberty of person how preform the analysis. This inspire the background of this research.

Forensics delay analysis is the process which measure the impact of a delay event to the date of completion of the project based. This process called 'Forensic' because it is based on the past data. The planned sequence of activities of the project agreed by parties at the beginning of the project will be the basis of this process. Sequence of activities of a project or project programme, has many dependencies. Most of those dependencies are subjective. Therefore it is very difficult to develop a mathematical model to assess the impact of a delay event to the programme and its date of completion. There are many delay analysis methods. TIA is a one of the most accepted method even recommended by society of construction law. Assessment of the effectiveness of TIA method to analyze delays in construction projects is the objective of the research. Effective method shall be applicable, justifiable and scientific.

Assessing criteria to assess the effectiveness of a delay analysis method has been developed referring to basic requirements in analyzing project delays, provisions in contract law and experts views. The impact of few delay events would be analyze by TIA method and it could be assessed by the assessing criteria. Delay event and application of TIA method and results are the parameters which shall be assessed. This process have many subjective parameters. Impact of subjective parameters related to the delay analysis process, should be nullify to obtain more 'generalized' results. Therefore instead of obtaining results under few cases, it is planned to study the behavior of TIA results with the variability of its subjective parameters. Then these relationships are assessed by the developed criteria. Simulation followed by a case study is the selected methodology for the research. Simulation of the TIA has been done using a model developed based on critical path method. Simulation model should be capable of assemble each simulations together to observe the impact of one delay event on other. Results of simulations would be graphically illustrated.

Effectiveness of TIA method has been assessed in view of scientific method of measurement and applicability to the accepted industrial requirements and norms.

TIA cannot fulfill the requirements of effective delay analysis method, all the times. TIA shall be perform with proper understanding of behavior of its results. Interpretation of TIA results and final decision over the time extension claim shall be still a job, highly depend on expert judgment of professionals.

Contents

List of Figures

List of Tables