

# **Abstract**

The desire of acquiring rapid profit and turnover resulted in squeezing construction periods, regardless of the degree of complexity and sophistications of modern construction projects. Squeezed construction periods increase the risk of completing construction projects behind schedule and over budget. The number of delay claims has been increased exponentially as a result of tightening project durations.

The analysis of delay claims has become an extremely complex, time-consuming and costly process. This is because the analysis entails extensive exploring of factual data and a thorough study of the effects of actual events on the progress of works. Where delay events are unplanned events that may affect the progress of the work in a manner that actual progress is deviated from planned progress.

Despite the existence of a wide range of delay analysis methods such methods suffered from several drawbacks and need to be improved. Most of the existing delay analysis methods are incapable of analyzing concurrent delays, lost productivity and acceleration claims. Meanwhile, they are not in line with the development of advanced planning and scheduling software packages. The lack of uniformity among delay analysis methods can provide widely varying results that complicate the process of settling delay claims.

Delay claim analysis employs two basic parts: the first is the entitlement and determination of extension of time and the second is the computation of the financial damages. Most of delay analysis techniques focus on the first part which is the entitlement and determination of the time extension. This is while the second part of the damages calculations is not integrated in most of the analysis. Both parts are equally important. Without entitlement, damages cannot be recovered. Without obtaining damages the mere establishment of entitlement and time extension means that equitable adjustment is not achieved.

Extensive research has been conducted on the impact of delays on construction projects. Great efforts were directed to compare between existing methods of delay analysis looking for superiority. Other efforts were directed to improve and automate the existing methods.