ABSTRACT

Construction time performance has been identified along with cost and quality as one of the three crucial success factors for a construction project. However, delays in construction projects are frequent and in some cases severe. There had been many researches on construction time performance but few had focused on comparing the time performance of Design-Bid-Build and Design and Build (D&B) procurement methods in Singapore.

This research examined the effect of project scope variables on the time performance of Design-Bid-Build and D&B projects. The objective is to find out whether variables such as contract duration, gross floor area (GFA), the number of subcontractors, suppliers and trades, the amount of provisional sum and preliminaries could explain the occurrence of delays in construction projects. This research also compared the effect of these project scope variables on time performance of Design-Bid-Build projects with that of D&B projects. In addition, this study aimed to find out if projects using D&B procurement method could achieve a faster completion time than that of Design-Bid-Build projects.

This study is conducted using the objective assessment approach by collecting ‘hard’ data of 20 Design-Bid-Build and 20 D&B projects. The effects of the 7 project scope variables on time delay were investigated and analysed using correlation and backward elimination multiple regression analysis.
It was shown that the effects of the 7 variables were less significant for D&B projects. It was concluded that the GFA, number of subcontractors and suppliers are significant for the 40 projects. It was further noted that the number of subcontractors, provisional sum and preliminaries are significant for Design-Bid-Build projects while the number of trades and provisional sum are significant for D&B projects. The results also showed that D&B projects did, indeed, perform better in terms of the time for completion.

Keywords: Time performance, contract duration, GFA, subcontractors, suppliers, trades, provisional sum, preliminaries, Design-Bid-Build, D&B, Singapore