

# **THE UTILIZATION OF ROBUST INTELLIGENT MODEL FOR PROJECT DURATION PREDICTION**

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As a matter of fact, the duration of construction any project relies on several indicators such as site features, construction location, project cost, procurement methods and multiple other factors. Predicting construction project duration accurately is highly significant for completing project on time. In this research, the application of soft computing technique namely extreme learning machine (ELM) model is used to predict construction project duration. The study is carried out using several factors effecting the target duration of construction project. The implemented data set were obtained from department of construction and technical works at the Middle East Technical University. The proposed ELM model was verified in comparison with artificial neural network (ANN) model. The performance of the modeling accuracy was inspected using several statistical indicators such as coefficient of determination (R), root mean square error (RMSE), and mean absolute percentage error (MAPE). The findings of this research showed a very reliable and practical implementation for the ELM model in predicting construction project duration over the very well-known GRNN model. In more representable details, the enhancement of the (RMSE and MAPE) values for ELM model over ANN model were (51.5 and 50.8 %).