CONSTRUCTION COST PREDICTOR: ML BASED APPROACH TO PREDICT COST OF CONSTRUCTION PROJECTS

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Abstract

Construction costs are an aspect of each contract for a building project, so they are a source of significant importance to project participants. Despite the value of costs in building projects, cost overruns are a global problem. Many plans are not executed within the estimated cost, i.e. they don't fulfill their value targets. As a consequence, concluding the building design within the agreed-upon budget has become a problem. Construction costs are affected by a combination of variable variables, finding it challenging to adjust for all of them mostly during cost forecasting period. Furthermore, the correlation between costs, performance, and time must be observed, which contributes to the process's scope and liability. As a result, cost estimation is a topic that construction project participants are especially interested in, particularly when a quick cost estimate is required. In addition, effective cost planning is critical for project participants' businesses, especially for large-scale projects that take a long time to complete. Similarly, articles have been extensively investigated depending on the application area, the approach used, the methods used, the publications in which they were written, and the year of publication. The most significant result of this research is proving that linear regression analysis gives more accurate prediction results than artificial neural network model. The suggested approach, titled "construction cost predictor," would be able to forecast a construction project's cost depending on its surface and structural features. Accurate cost predictions that more reasonably illustrate conditions in a particular building project will be beneficial to both the contractors and investors.

Keywords: Machine Learning, Regression Analysis, Civil Engineering, Artificial Neural Networks, Cost estimation