International Congress on Civil Engineering, Architecture and Urban Sustainable Development in Asia
TOKYO – JAPAN
2020

Predicting Oil Well Site Projects Cost in Oil-Rich Regions South of Iran using Neural Networks

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Abstract

Cost is one of the fundamental factors in project implementation and completion, whereas prediction is a key principle of project management. When predicting the project cost, a process is implemented in the project which makes it run within a specific framework with predefined costs, thus preventing possible cost deviations. Neural network modeling is one of the cost prediction methods. This method has a prominent place in engineering sciences due to the ability to model complex relationships between variables. This paper used 22 key parameters in oil-well site projects in the south-Iranian oil-rich regions as input for the neural network model and MATLAB program in order to predict project implementation and completion costs. After modeling the neural network, considering the error and correlation coefficients and after comparing the neural network outputs vs. the cost estimates and error assessment, it appears that the proposed neural network and model can predict the costs of such projects with acceptable error.

Key words: Cost Prediction, Oil Well Site, Neural Networks, Matlab Software.

1. Introduction

Reliable prediction is a key component of project planning, control, and risk-management. The main logic behind prediction is enabling the manager to issue timely warnings when modifications or preventive measures are necessary. Such predictions require constant updates and comparisons with the original plan. Therefore, actual project control manifests when the manager is able to correctly predict the time and total cost of project in each phase of the operation [1].