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Neural network and probabilty based cost expectation limit model for residential building cost

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The aim of this study is to develop a Cost Expectancy Limit Model that could assist clients in having proactive information about construction cost expectation of a particular building type with a view of assisting the client in proactive determination of expected construction cost of a building under predetermined conditions. Two population frames were used in this context. First, a population frame of 1500 samples of actual construction cost of residential building in Lagos state Nigeria out of which 1000 samples of As-built cost (Actual cost) of residential buildings were used, in artificial neural network data training and model development using MATLAB Neuro tools. The second population sample was 250 samples of construction professionals, out of which 200 samples was picked for purpose of questionnaire administration to capture data on factors that could influence building cost expectancy. Mean Item Score, Simple Percentage, and Relative Agreement Index of SPSS package was used to analyze and process the data. Cost expectancy limit was developed with parameters trained with Artificial Neural Networks, while factors that influence the accurateness of the expectancy model were articulated, such as economic factors, political factors, activity of maestros, macro and micro economic variables, and corruption factors, among others. The study recommends the use of the model and strategy for effectiveness in accurate prediction of construction cost among other things. Copyright © 2019 ISEC Press.

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