Integrating Artificial Neural Network and Taguchi Method on Constructing the Real Estate Appraisal Model

Authors : Mu-Yen Chen, Min-Hsuan Fan, Chia-Chen Chen, Siang-Yu Jhong

Abstract : In recent years, real estate prediction or valuation has been a topic of discussion in many developed countries. Improper hype created by investors leads to fluctuating prices of real estate, affecting many consumers to purchase their own homes. Therefore, scholars from various countries have conducted research in real estate valuation and prediction. With the back-propagation neural network that has been popular in recent years and the orthogonal array in the Taguchi method, this study aimed to find the optimal parameter combination at different levels of orthogonal array after the system presented different parameter combinations, so that the artificial neural network obtained the most accurate results. The experimental results also demonstrated that the method presented in the study had a better result than traditional machine learning. Finally, it also showed that the model proposed in this study had the optimal predictive effect, and could significantly reduce the cost of time in simulation operation. The best predictive results could be found with a fewer number of experiments more efficiently. Thus users could predict a real estate transaction price that is not far from the current actual prices.

Keywords : artificial neural network, Taguchi method, real estate valuation model, investors
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