Title of Article: Expert System Approach to Overcoming Excessive Cost on Building Sites

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Abstract: A number of uncompleted and abandoned building projects are attributable to overall bad projects management. Determination of accurate cost of building projects is a huge factor in successful project management. This work is to ensure that accurate cost is determined and accurate as much as possible. Artificial neural network was used in this work to generate a cost predicting model. Neural network is a human brain simulated system having similar characteristic with human brain. This study entails using the strengths of neural network such back-propagation effects, consistent output, less margin error, stable output and good processing speed, to develop a stable predictive cost models for building works. Data on building projects’ cost parameters were grouped into work packets and fed into Back elimination neural network with levenberg-marqua set at 1000 epoch, to train the data and model generation. The model generated was cross-validated with step-wise regression technique, and re-sampling method was applied to establish the model’s degree of stability. This model has relative average efficiency of 0.763 and coefficient of performance of 1.311 and average mean square error (M.S.E) of 0.01136, the MSE is an index used to measure when well fitted output is obtained to avoid output over fitting. In addition to the model generated, project cost influence matrix, risk-probability matrix and cost expectancy limit were formulated in this research work to enhance the
models’ validity and stability. It is hoped that a stable model will lead to a stable cost, firmly established to ensure adequate funding for project delivery.