Application of Support Vector Machines in Forecasting Non-Residential

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Abstract : This paper deals with the application of a novel neural network technique, so-called Support Vector Machine (SVM). The objective of this study is to explore the variable and parameter of forecasting factors in the construction industry to build up forecasting model for construction quantity in Thailand. The scope of the research is to study the non-residential construction quantity in Thailand. There are 44 sets of yearly data available, ranging from 1965 to 2009. The correlation between economic indicators and construction demand with the lag of one year was developed by Apichat Buakla. The selected variables are used to develop SVM models to forecast the non-residential construction quantity in Thailand. The parameters are selected by using ten-fold cross-validation method. The results are indicated in term of Mean Absolute Percentage Error (MAPE). The MAPE value for the non-residential construction quantity predicted by Epsilon-SVR in corporation with Radial Basis Function (RBF) of kernel function type is 5.90. Analysis of the experimental results show that the support vector machine modelling technique can be applied to forecast construction quantity time series which is useful for decision planning and management purpose.