Forecasting of Cement Sales Demand for Oman Cement Company By Using Linear Regression and Artificial Neural Network (ANN)

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Abstract

A major problem recently appeared because the lack of local produced cement which gave rise to very high costs. The problem was escalated to an economic crisis because it did not just cover the building construction in the general public area but extended its effect to the governmental infrastructure projects. Numerous Large and small projects were either stuck to halt or postponed.

Hence the main idea of this project is to identify major factors that affect cement production and sales. Based on gathered opinions of experts in this field these factors were identified and a model is developed around the environment of neural network and Regression techniques using the collected data for a period of years (2002 – 2007). Hence these models were validated and the effect of these factors on the forecast demand was examined.

In addition to above the cement demand was forecasted for the year 2008. Comparing the forecasted result of cement demand using the two different models that have been developed, the artificial neural network method approve the ability to develop a model which is better than the linear regression model in term of accuracy and nonlinearity.