A Back Propagation Artificial Neural Network based Model for Detecting and Predicting Fraudulent Financial Reporting

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Abstract

Fraudulent financial reporting has become an important issue in accounting profession, the implementation of self-assessment system appears as incentives to companies to misstate their financial reports to reduce tax obligation. Fraudulent financial reporting may cause fast losses to government income, as well as losses to the users of financial reports; several recent Studies have examined the feasibility of using various machine learning techniques in business and industrial applications. The purpose of this research is to propose a back propagation based artificial neural network model for Fraudulent Financial Reporting detection and prediction. Another main objective for this proposed model is using it in measuring the financial performance assessment by detecting the positive and negative deviations in certain important accounts balances such as net sales, and accounts receivable, which will support top managers in taking important strategic financial decisions for their companies. The proposed model was implemented using NeuronsSolution ANN software and has been applied on two large Egyptian companies managing electricity distribution in Egypt. The implementation results of this proposed model showed that the model is successful, efficient and reliable in detecting and predicting fraudulent financial reporting, and also the assessment of any company's financial performance.

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