

The Use of Neural Networks as an Audit Tool in Fraud Risk Assessment

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Abstract

Despite the potential utility of neural networks, most practicing accountants and auditors are not familiar with this emerging audit tool. This article offers auditors some insight into neural networks and uses a simulated fraud case to illustrate the potential power of this emerging technology relative to other techniques that might be used in assessing fraud risk. Results from the illustration are compared with results from similar studies that employed neural networks. The case analyzed in the paper, as well as the results of similar studies, suggest that, as a fraud risk assessment tool, neural network models may perform better than many simple and sophisticated procedures used by practicing auditors. A key reason for the superiority of neural network models is the ability of such models to recognize and learn complex patterns within and between different sets of variables. Despite the ability of neural networks to learn highly complex patterns and make correct predictions and classifications, there are several hurdles that auditors should seek to overcome before using such models in practice. Some of those limitations are discussed in the paper.