

Establishing a Short-Term Liquidity Evaluation Model for Tourist Enterprises Using a Back-propagation Neural Network

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Abstract

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Financial statements can indicate the financial status of the enterprise at a certain time and during a certain period. For predicting future earnings, dividends, cash flows, and operating risks, financial statements can be used as a crucial reference. However, analyzing the financial statements of enterprises is a complex and time-consuming task. Additionally, because the analysis depends significantly on the expertise of financial experts, their subjective judgments may lead to inaccurate financial ratings. To reduce inaccurate financial ratings caused by human error or numerous complex financial indices, we used a back-propagation neural network to establish the financial rating expert modeling, using the short-term liquidity of listed and over-the-counter tourist enterprises in Taiwan as the analysis target. We used rating opinions provided by financial experts to conduct model training. The empirical results showed that the model that completed training possessed 92% and 88% accuracy for various training methods regarding the short-term liquidity rating prediction for tourist enterprises. The established model can determine the sequential order of importance for each financial index through sensitivity analysis. This can clarify the crucial consideration of financial experts when

conducting short-term liquidity ratings. Determining the important indexed sequential order that influences the decision model can enable financial experts to review the correctness of the experts' decisions and improve the decision reliability and quality.

Keyword : Keywords: Back-Propagation Neural Network, Short-Term Liquidity, Expert Modeling