The study of business performance and multi-objective decision support system for the Taiwan banking industry

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Abstract

Business performance and multi-objective decision support systems play a critical role forsurviving in a strongly competitive global market. Accurate business performance evaluation is akey to strength enterprises competition. In this paper, we collect the financial indices of therelevant literatures for analyzing the relationship among the indices. Four different abilities are commonly considered when analyzing the financial health of a company--liquidity/Debt-paying, financial structure/Stability, activity/efficiency, and profitability. Each one has different indices for measurement. In total, there are 11 indices included (e.g. Current ratio, Quick Ratio, Debt to Total Assets Ratio, Permanent Capital to Fixed Assets Ratio, Accounts Receivable Turnover, Average Accounts Receivable Collection, Fixed Asset Turnover Ratio, Total Asset Turnover Ratio, Return on Assets, Return on Equity, Net Profit Ratio). In order to select better performance indices, we adopt structural equationmodel (SEM) to explore the relationship among the various indicators. Once we find out thecritical indices, we can use them to evaluate business performance. Meanwhile, we develop a multi-objective decision programming model for the Taiwan banking Industry for adequately allocating resources to improve profits. Finally, a multiple objective decision support system is built and the modeling and result of business performance evaluation is presented and some suggestions are given to managers for making decisions.