

Regression decision tree technique in credit analysis and forecasting at Saigon-Hanoi Commercial Joint Stock Bank (SHB), Thai Nguyen branch

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Abstract: This study investigates the application of regression decision tree techniques for credit analysis and forecasting at Saigon-Hanoi Commercial Joint Stock Bank (SHB), Thai Nguyen branch. Given the increasing complexity of credit risk management in Vietnamese commercial banking, traditional statistical methods often fall short in capturing non-linear relationships within borrower data. This research constructs and evaluates regression tree models using historical loan performance data from SHB Thai Nguyen to predict credit risk indicators and identify key determinants of default. The methodology involves data preprocessing, feature selection, and model training, with performance assessed through metrics such as Root Mean Square Error (RMSE) and R-squared. Preliminary findings indicate that the regression tree model effectively segments borrowers into risk groups based on variables like income, loan purpose, and repayment history, offering superior interpretability compared to black-box models. The results provide SHB Thai Nguyen with a practical, data-driven tool for enhancing credit scoring accuracy and supporting informed lending decisions, thereby contributing to more robust risk management frameworks within the branch.

Keywords: regression decision tree, credit forecasting, SHB bank, credit analysis