



PREDICTING DECISIONS ON LOAN PERFORMANCE USING BUSINESS INTELLIGENCE TOOL

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Due to the improvement of new technologies, the financial sector has become much more complicated than ever before. These improvements have completely changed the traditional ways of thinking. Therefore using new technologies, the factors that affect loan performance can be identified, thus making the ability to identify the life cycle of a loan transaction in advance. In this research, the reasons/factors of a loan to become a non-performing were studied, with respect to a reputed Insurance Company. Decision Trees, Neural Networking and Clustering algorithms were used to create mining models using the Business Intelligence Tool. The best algorithm was selected by comparing each model. 750 records and eighteen variables were used to identify factors. Among those variables, eleven variables namely: Age, Area, Branch Name, Customer Job, Income, Mortgage, Number of Terms, Overdue Days, Product Type, Interest Rate, and Loan State were selected. Having considered all these factors, the most influential factor/s was/were identified. The predicted probabilities of Decision Trees, Neural Networks and Clustering models were 0.44%, 1.57% and 10.46% respectively. Clustering algorithm was selected as the best algorithm for this study since the probability of clustering algorithm shows higher value of 10.46%. After analyzing this algorithm Product Type, Customer Job, Mortgage, Income, Number of Terms and Interest Rate were identified and shortlisted as the factors which affect the most for non-performance of loans. The research revealed that the Product Type is the factor affected most for non-performing loan state. If the customer is self-employed, a small property owner, having a lower income, the longer period for loan repayment, higher interest rates and depending on the type of mortgage the loan tend to be non-performing. An Insurance company will be able to maximize its profits if they focus mostly on such customers and implement appropriate alternative options based on the strategies of individual companies in industry. The model will aid any Insurance Company in identifying the amount of loans that could be transformed into non-performing state. Therefore the findings of this research would benefit the Insurance industry to minimize the risk on granting non-performing loans in the future.

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