

Credit Risk Assessment Using Rule Based Classifiers: A Comparative Study

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Abstract : Credit risk is the most important issue for financial institutions. Its assessment becomes an important task used to predict defaulter customers and classify customers as good or bad payers. To this objective, numerous techniques have been applied for credit risk assessment. However, to our knowledge, several evaluation techniques are black-box models such as neural networks, SVM, etc. They generate applicants' classes without any explanation. In this paper, we propose to assess credit risk using rules classification method. Our output is a set of rules which describe and explain the decision. To this end, we will compare seven classification algorithms (JRip, Decision Table, OneR, ZeroR, Fuzzy Rule, PART and Genetic programming (GP)) where the goal is to find the best rules satisfying many criteria: accuracy, sensitivity, and specificity. The obtained results confirm the efficiency of the GP algorithm for German and Australian datasets compared to other rule-based techniques to predict the credit risk.

Keywords : credit risk assessment, classification algorithms, data mining, rule extraction

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