A NEURAL NETWORK CLASSIFICATION OF CREDIT APPLICANTS 
IN CONSUMER CREDIT SCORING

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ABSTRACT
The paper aims to find an efficient model for consumer credit scoring using neural networks in comparison with logistic regression. A specific characteristic of the examined data set was that the credit repayment period was not completed. Applicants are divided into three categories: "good", "bad", and indeterminate ("poor") applicants which influenced the model accuracy. Five different modeling strategies were tested: (1) multinomial model with three categories of applicants, (2) binomial model using only good and bad applicants, (3) binomial model including poor applicants as good, (4) binomial model including poor applicants as bad, and (5) binomial model in which poor credit applicants were estimated by model 2 and then included in the dataset. The radial basis function network with softmax activation function produced best results among the three neural network algorithms tested. The results suggest that the best strategy to deal with poor applicants is to estimate them as good and bad, and then include into the model or to exclude them from the data set, although some further investigation is to be followed.

KEY WORDS
credit scoring modeling, logistic regression, neural networks, and radial basis function network