

# Neural Net Credit Scoring Models for Egyptian Banks: An Evaluation of Consumer Loans

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## Abstract

Credit scoring is regarded as a core statistical appraisal tool of financial institutions in general and banks in particular during the last few decades. Furthermore, neural nets have become one of the most important tools using in credit scoring. In this paper we apply a simply validation technique by dividing the data-set into a training sample, and a hold-out sample that tests the predictive effectiveness of the fitted model. To study the overall predictive capability of the classification models, we used the whole data-set as a test set. The purpose of this paper is to investigate the ability of neural nets, such as probabilistic neural nets and multi-layer feed-forward nets, and conventional techniques, such as discriminant analysis, probit analysis and logistic regression, in evaluating customer credit in Egyptian banks applying credit scoring models. The credit scoring task is based on a case-study of consumer loans by an Egyptian bank. We examined both correct classification rates and misclassification costs. The results so far reveal that the neural nets-models give a better average correct classification rate and lower misclassification costs than the other techniques. However, there is evidence of significant differences between the neural net models. A one way ANOVA was conducted, as well as other tests, revealing some significant differences between the means, medians and variances of the sets of correct classification rates from the neural net models. Overall, probabilistic neural nets were established as the superior unified technique.

**Keywords:** Credit scoring; Neural nets; Egyptian Banks.

**JEL Classification:** G21, G32

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