

Abstract: **Update of generic scoring model by new information**

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Creating an empirical scoring model based on bank's own data is considered to be more appropriate method for predicting customer's future behaviour than using a generic scoring model. However, some institutions could face the problem of not having adequate quantity of records that would describe past customer's behaviour for creating such a scoring model. Among many examples of institutions facing this kind of problem we can mention several cases from a banking sector: (1) International bank opening a branch in a new country. Such a bank could already possess a scoring model constructed from empirical data. Even if this model could work pretty well in the country of its origin, there is a need to adapt it to new economical environment. (2) Local bank with a small number of customers. The bank could wish to include information specific for its activity area. This can be done by updating a generic scoring card with a use of data records describing bank's own customers. (3) A financial institution offering new services and possessing a scoring model for the services it is already offering. The institution could wish to modify this model to make it adequate prediction tool also for the new services. (4) Banks offering services to a new group of customers.

The article presents the method of updating generic scoring model into an empirical one by subsequent adoptions of information from the data describing new customers. The previous scoring model in the sequence is treated as the source of prior information that is modified by new incoming observations. Proposed approach for solving the problem described above could be useful for any situation in which it is advisable to create new scoring model by modification of the old one. In other words, this is a situation where knowledge corresponding to an old scoring model could not be ignored in a process of constructing new model. We explore a method based on Monte Carlo simulation and Bayesian approach to modify prior information represented as generic scoring model into posterior scoring model using additional data the bank possesses. The theoretical discussion is followed by presentation of empirical results based on our research.