

A case study of reject inference: Misleading extrapolation from the accepts

Ross Gayler – Veda Advantage

Traditional reject inference methods rely only on performance within the development data set. That is, they extrapolate from the outcome pattern observed in the accepted applications. Alternative reject inference methods use external outcome data (e.g. credit bureau performance) as a proxy for the internal performance of the rejected applications. In principle, the purely internal methods should not work because they do not provide any extra information. However, they are generally held to work well enough in practice.

This case study examines a data set with both internal and external outcome data that demonstrates how very misleading extrapolation from the accepted applications can be. Bureau data is used as an external proxy for internal outcome. A model is developed to relate the two outcomes as a function of score when they are both observable. In this data set the score to bureau outcome relationship differs strongly between the accepts and rejects, meaning that any extrapolation from the accepts only is likely to be quite wrong.