

# **Predicting and managing Credit risks using RIDGE and Logistic LASSO regression**

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## **Abstract**

When borrowers default or fail to repay the lenders (banks), default-linked risks-so called credit risks do emerge. Such risks are critical to several agents like creditors, borrowing firms, and governments alike. As such, financial engineers have been putting in place some scientific approaches to develop empirical models for predicting and modelling credit risks including default probability calculations. This paper however presents another way of predicting default and credit risks for effective credit risks management. The logistic lasso and ridge regression were employed. These methods are very good at dealing well with multi-collinearity and over-fitting by providing a basis for best properties that minimize instability on numerically manipulated data. This makes our results viable and valid. Using the borrowers' pool and cohort datasets for 10 active banks in South Africa we applied our models to detect potential defaulters and to make some predictions for effective credit risks control. From the noted results, both logistic and ridge regressions are efficient ways of detecting potential defaulters and credit risks management than the widely used general logistic regressions as indicated by the minimum obtained prediction errors.