

DIRECTED RISK RESEARCH PROBLEM STATEMENT

Risk Theme	Predictive modelling	Problem Nr.	PS18004
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Client Name	Johann Botha	Client Org.	Standard Bank		
Designation	Senior Analyst				
E-mail	JohannAdam.botha@standardbank.co.za	Tel (w)	+27 117215154	Mobile	0842884308

PS Status	Open	Date	18 Jun 2018	Revised PS	n/a
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PROJECT TITLE: Machine learning and its applications in predictive modelling.

PROJECT GOAL

The goal of the project is to propose new methodologies (machine learning) in the predictive modelling context, with a specific focus on:

- Factorization
- Variable selection using knock-offs
- Quantile regression

HIGH LEVEL DESCRIPTION OF PROBLEM

Predictive modelling is a process used in predictive analytics to create a statistical model of future behaviour. Predictive models are widely used as analytical tools in retail credit. Within the models to be considered, more traditional techniques exist but then also the so-called machine learning techniques.

PROJECT OBJECTIVES

The following are important aspects in predictive modelling that requires further research:

- Factorization: Investigate the possible use of factorization within the context of predictive modelling
- Variable selection using knock-offs: Research the effectiveness of using knock-offs as variable selection techniques.
- Quantile regression: Research the use of quantile regression within the context of knock-offs.

OUTPUTS REQUIRED

The output required from this research study is a formal report which discusses different machine learning and its applications within the predictive modelling field of finance.

STRATEGIC VALUE TO DIRECTED RISK RESEARCH

This research will increase insight into machine learning techniques as well as its application in the predictive modelling field of finance.