

[Important local research paper addresses models and calibration in financial institutions](#)

Theoretical research with important practical implications

A recently-published local research paper titled *'Using Model Performance to Assess the Representativeness of Data for Model Development and Calibration in Financial Institutions,'* addresses a method to assess the representativeness of external or pooled data used by banks internationally in regulatory model development and calibration.

'The financial services industry is a highly regulated sector. The importance of academic, yet practically-orientated research concerning the implementation and execution of regulations within the financial services industry, is therefore of substantial value to practitioners globally,' comments Prof WD Schutte, one of the three co-authors of the paper and an academic affiliated to the National Institute of Theoretical and Computational Sciences (NITheCS). The three co-authors of the paper are staff members of the Centre for Business Mathematics and Informatics (CBMI) at the North-West University. The first-listed author, Chamay Kruger, is busy with her MSc in Risk Analytics at the CBMI and the paper forms part of her dissertation. The third author is Prof Tanja Verster.

Prof Schutte, who is the sub-programme leader of Risk Analytics at the CBMI, comments on the practical implications of their research: 'The CBMI has several contracts with financial institutions to conduct applied research. This industry knowledge enables us to understand the challenges and opportunities in the industry. At the same time, the development of data science as a specialist academic field contributes towards the theoretical foundation of our research. By joining the industry knowledge with sound academic research, we endeavour to contribute towards the financial service industry by publishing papers such as the current one.' The value of the current paper lies among others in the fact that there is currently no formal methodology to assess the representativeness of external or pooled data when it is used by banks in regulatory model development and calibration. Thus, the local researchers' work breaks new ground, while also providing a review of existing regulatory literature on the requirements of assessing representativeness.

Local research – but international value

'Because the South African banking industry is globally recognised as being sophisticated, 'the benefit for researchers like ourselves is that we have access to cutting-edge ideas and concepts originating from the South African financial system. Because these concepts must also be formalised and substantiated from an academic perspective, our research contributes towards both the practical and academic domains. Furthermore, banking regulations are globally propagated through the Basel Committee on Banking Supervision (BCBS). Usually, local regulators of financial institutions then issue legislation and laws in accordance with the standards of the BCBS. Therefore, the research that we are conducting

is globally relevant and recognised internationally, as financial institutions across the globe are governed by similar legislation and rules. Our research is also not only relevant for practitioners in the financial service industry, but also for regulators that need to enforce the standards proposed by the BCBS,' adds Prof Schutte.

To elaborate on the global significance of the research, the paper refers to two case studies examined by them: they compared their methodology with the Multivariate Prediction Accuracy Index, which investigates whether a pooled data source from Global Credit Data (GCD) is representative when considering the enrichment of internal data with pooled data in the development of a regulatory loss given default (LGD) model.

NITheCS – critically important

Prof Schutte also comments on the value of the NITheCS in the establishment of data science as a focused research area: 'It is critically important. Researchers can collaborate towards sharing ideas, techniques, and breakthroughs from not only a single discipline, but from a wide array of mathematical and computational founded branches of learning. The NITheCS also provides the opportunity for researchers to connect with related specialists, potentially resulting in the establishment of collaboration and research agreements between entities. This platform allows researchers the opportunity to showcase their findings, to stimulate new ideas, and/or influence students to engage, partake and contribute towards the body of knowledge.'

The full paper can be found at <https://www.mdpi.com/2227-9091/9/11/204>

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