A Parametric Machine Learning approach to Affordability

Abstract

A parametric machine learning approach to affordability assessment for credit applicants is introduced. It is designed for scenarios where lenders lack complete income and expenditure data but seek to move beyond traditional debt-to-income ratio analysis. The approach outperforms both debt-to-income assessments and models using naive loss functions in its ability to predict future financial health. This paper explores the practical application of the approach including two variable selection techniques, with a focus on affordability assessments for originations. We consider the differences between secured and unsecured payments, as well as installment payments and revolving line assignments. The model prioritizes explainability to ensure practical implementation in the originations process.

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