Home Credit Business Problem Statement

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Business Problem

Many individuals with little to no credit history struggle to access loans due to the traditional credit scoring system. These underserved customers often face high rejection rates, or worse, fall victim to untrustworthy lenders, which leads to financial instability. While Home Credit is dedicated to broadening financial inclusion for the unbanked population, their current methods for assessing creditworthiness could be improved. Despite using alternative data such as telco and transactional information, the prediction models occasionally misjudge a client's ability to repay, causing either loan rejections for capable clients or the issuance of loans with unfavorable terms. This inefficiency in assessing repayment ability means Home Credit might miss out on good-paying customers or expose themselves to unnecessary risk.

Benefit of a Solution

The goal of this project is to refine Home Credit's current credit assessment process by using advanced machine learning techniques. With a more accurate model, we can ensure that clients capable of repayment are not rejected and that loans are offered on terms that better align with their ability to repay. This will ultimately lead to a more inclusive financial environment and better loan performance, which translates to more satisfied clients and reduced risk for Home Credit. The improved model will also enable us to expand our services to a broader population, contributing to business growth and enhanced customer trust.

Analytics Approach

We will use a supervised machine learning approach to predict the repayment ability of clients based on a variety of historical and alternative data sources. The target variable will be binary, representing whether a client was able to repay their loan (as seen in the training data). The model will take into account features from several data sources, including credit history from other financial institutions (bureau.csv), internal credit balances (POS_CASH_balance.csv, credit_card_balance.csv), and installment payment behaviors (installments_payments.csv). By analyzing this rich dataset, we aim to develop a model that will more accurately predict repayment likelihood, allowing for better decision-making when issuing loans.

Success Metrics

The success of this project will be measured by the accuracy and efficiency of the new model in predicting repayment. Specifically, the model should reduce loan rejection rates for clients who have a high likelihood of repayment while minimizing the issuance of risky loans. One key metric

will be the reduction in false negatives (clients capable of repayment being rejected) by at least 20%, while maintaining or improving the precision of identifying high-risk clients. Another success metric will be improved loan performance, with a target of reducing default rates by 15% through more tailored loan terms.

Scope

The project deliverable will be a predictive model that assesses a client's repayment ability using Home Credit's available data, categorized into different risk groups. Additionally, the project will include updating internal loan approval processes to better integrate these risk assessments. Initially, the model will be used for loans under specific risk criteria, but later, it may be expanded to cover a wider range of loan products. The project will focus solely on optimizing loan approval for Home Credit's unbanked client base, with possible expansion to include broader customer segments at a later stage.

Details

The project will be executed by me, Joonas Tahvanainen and his team. Regular updates will be provided to key stakeholders, if any. The project will be completed within 4 months. A final review and adjustments will take place before the project launch.