

TRAVIS LOAN CONSULTANCY LOAN APPROVAL RISK ANALYSIS

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TRAVIS LOAN ANALYST



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AGENDA

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EXECUTIVE SUMMARY

Project Overview

Travis Loan
Consultancy wants to
analyze features that
influence loan
approvals of applicants

Project Objective

Build a predictive model that can predict
risky and non-risky loan applicants

Bottom Line

73% of high-risk
applicants were
correctly identified by
the model, significantly
reducing the likelihood
of approving risky
loans.



RELEVANCY OF THE ANALYSIS



Accurately predicting loan approval risk

=

Minimize losses/More stable and profitable lending operations

Advanced risk assessment techniques

=

Offering more attractive loan terms to low-risk applicants



DATA OVERVIEW

Source:

- Kaggle Loan Approval Dataset based on India Residents
- 252,000 applicants
- Loan applicants characteristics and their risk assessment

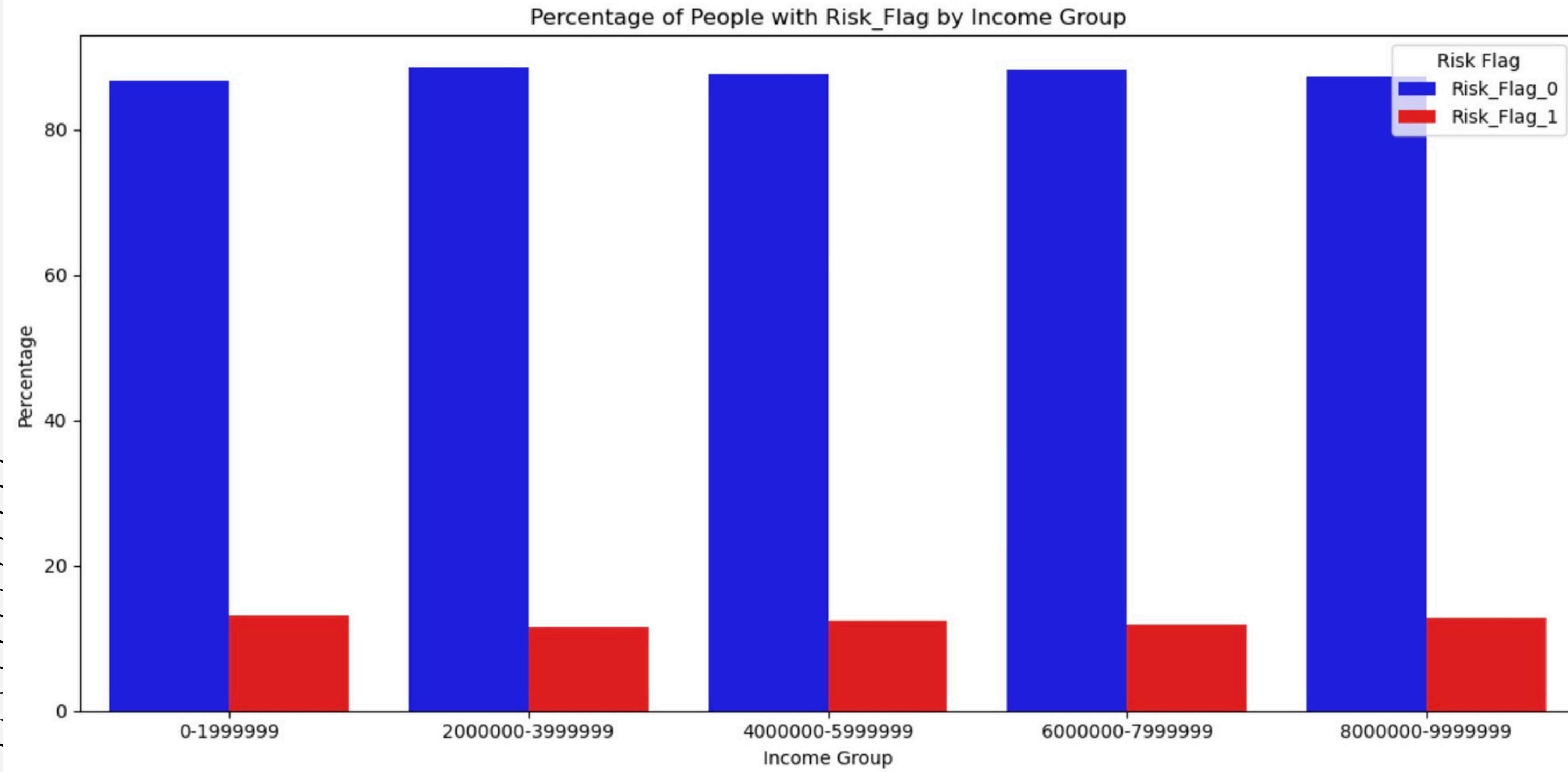
Limitations:

- Class Imbalance (Risky/ Non-Risky)
- Regional Variations (economic conditions)

EDA INSIGHTS

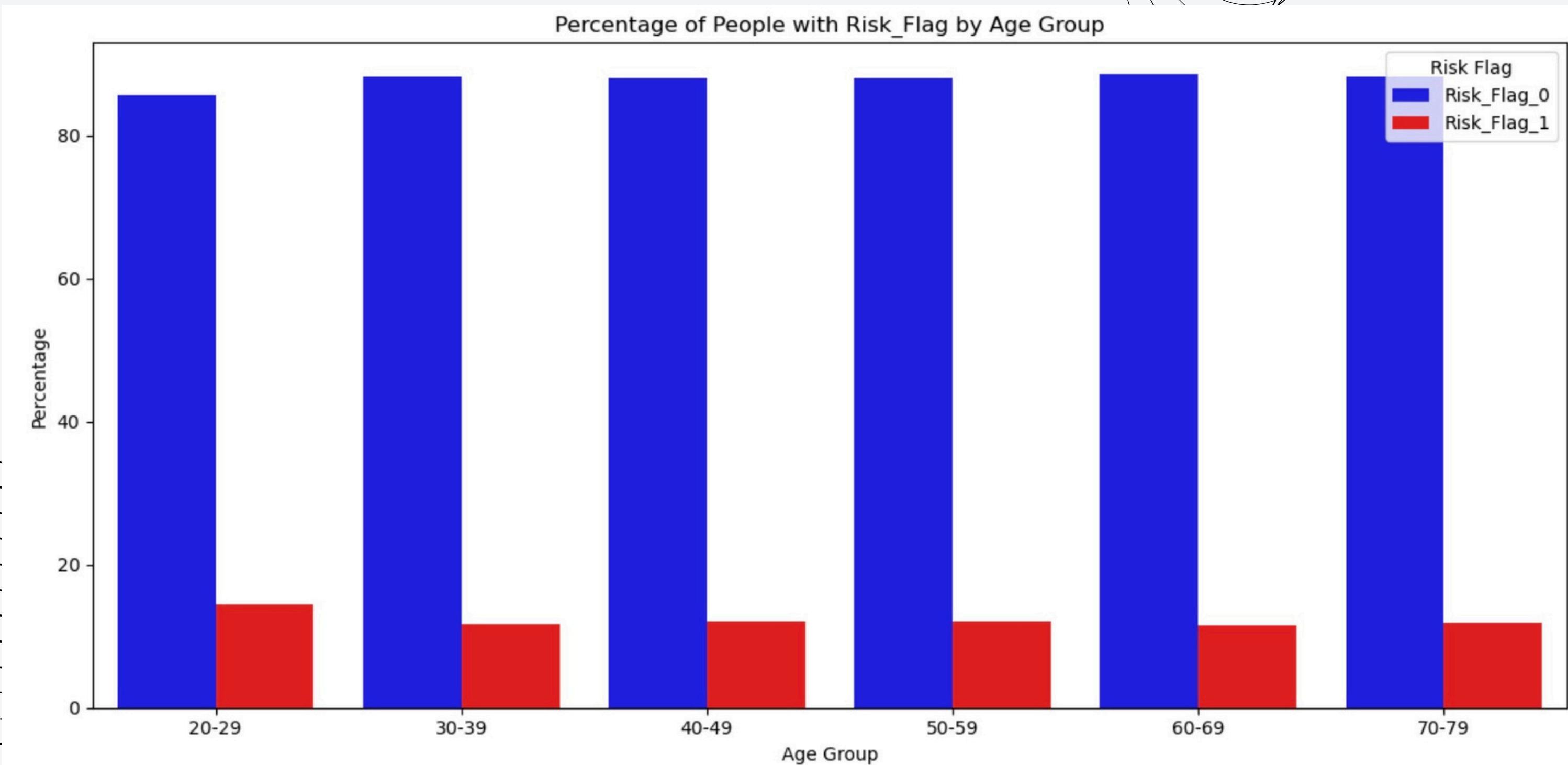
Income Distribution

- Higher-income applicants are less likely to be classified as high-risk.



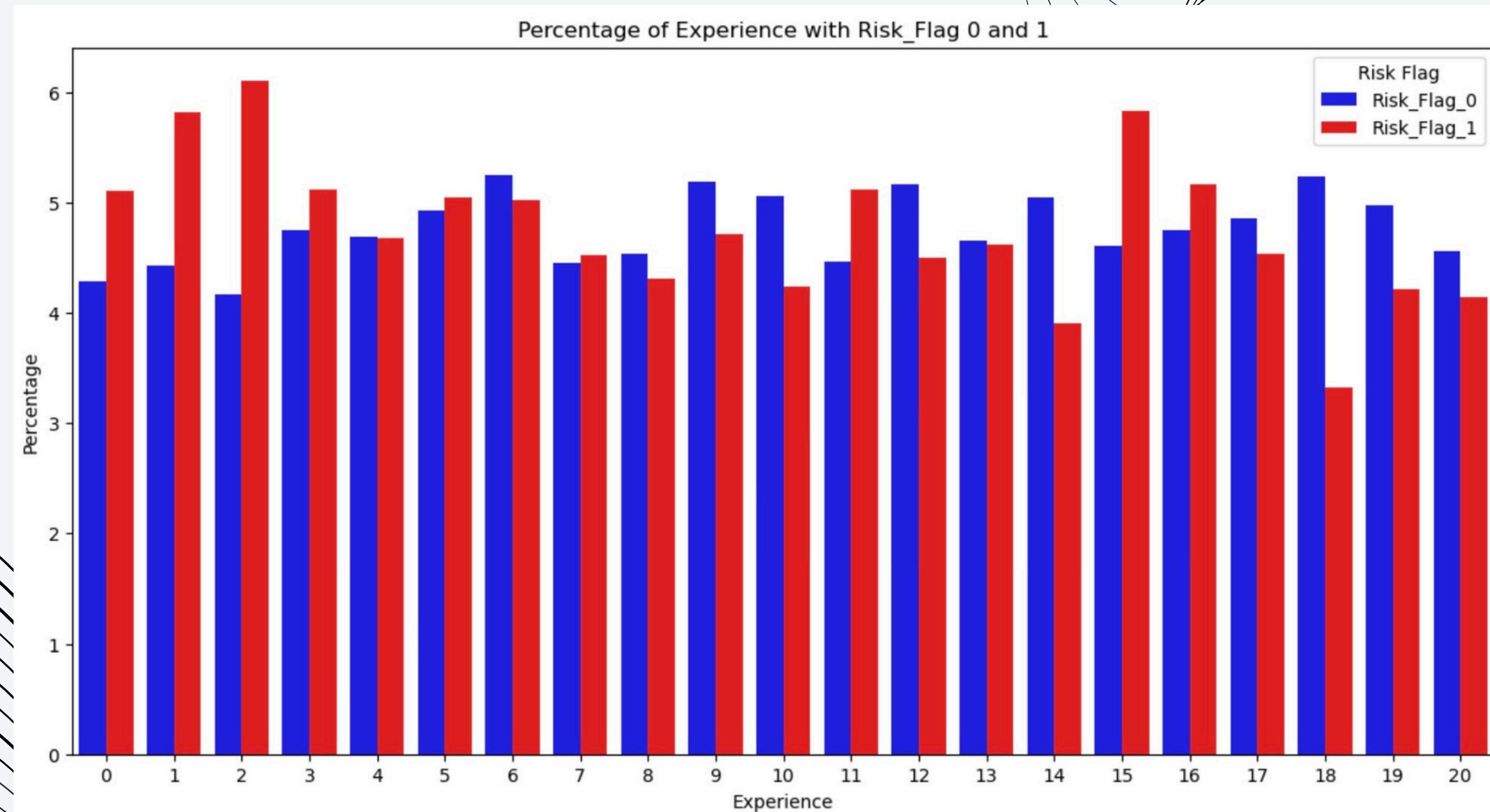
Age Distribution

- Older applicants tend to have a lower risk of loan default, indicating that age is strong predictors of loan approval.



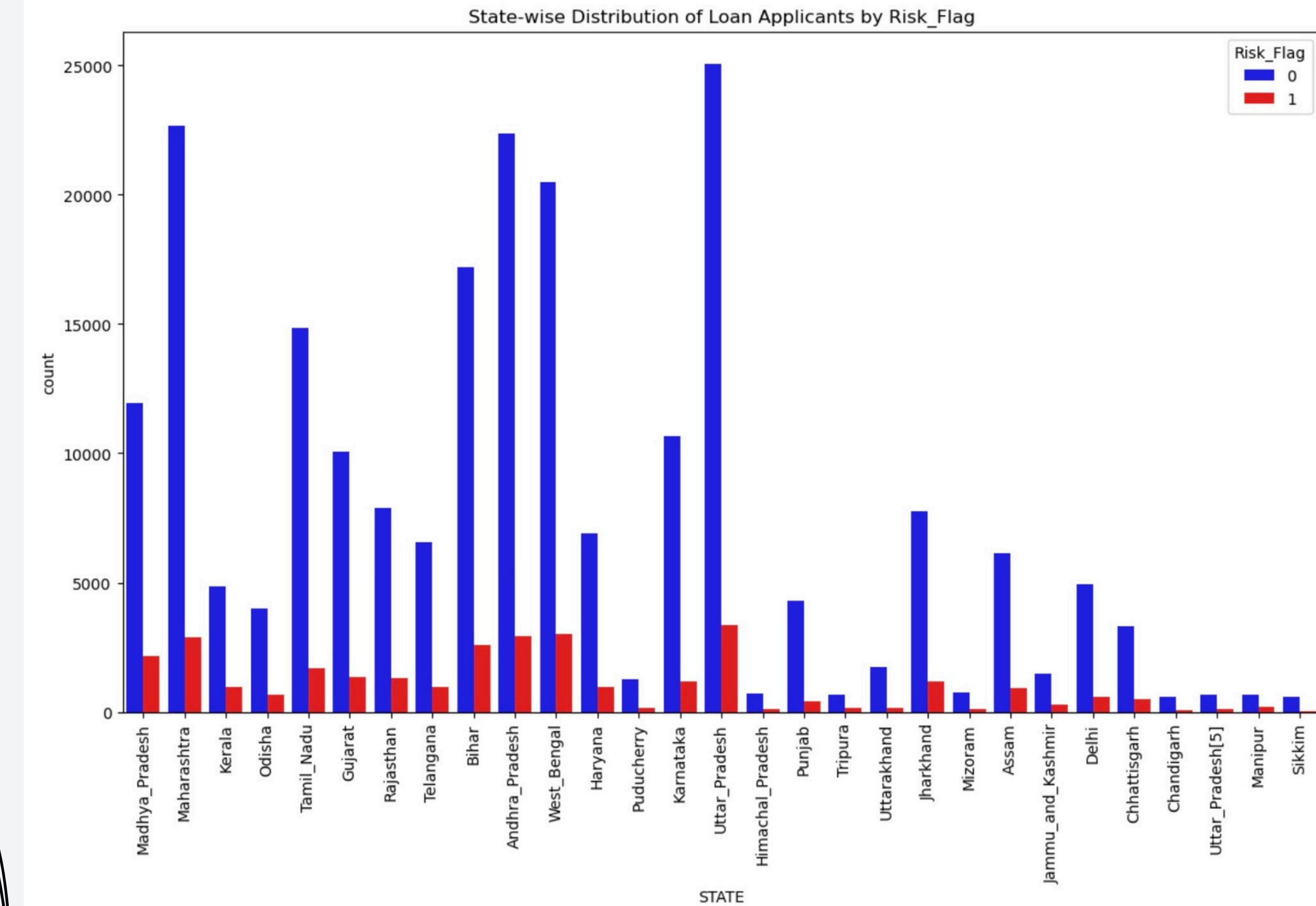
Experience Distribution

- Applicants with more years of work experience tend to have a lower risk of loan default, indicating that experience are strong predictors of loan approval.



Geographical Impact

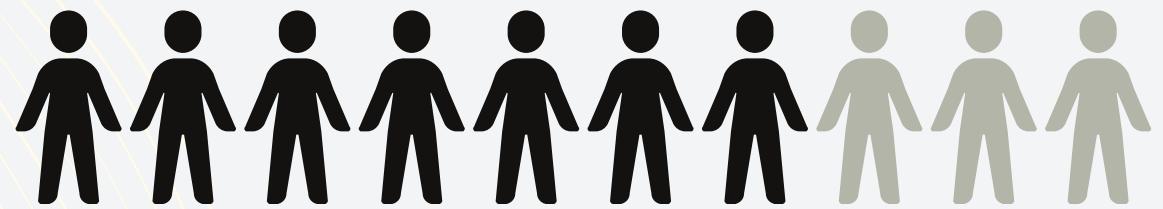
- Loan approval risk varies significantly across different states, indicating the importance of regional economic conditions and local policies in loan risk.



MODEL

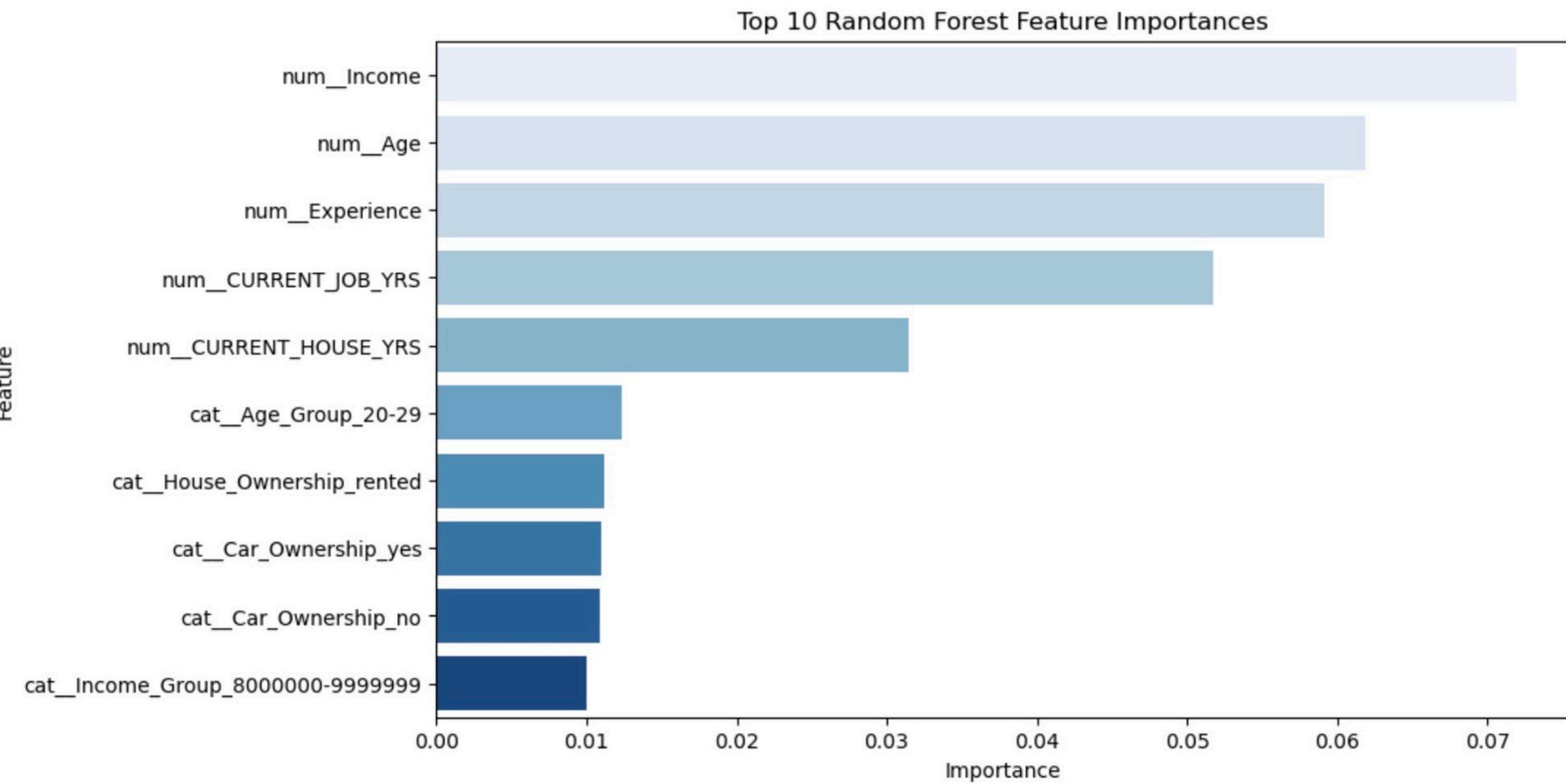
- Model: Random Forest
- Metric: Recall (73%)
- **High-Risk Applicant Detection:** Model effectively identified 73% of high-risk loan applicants
- **Optimized Model Performance:** Proper model tuning ensures our model provides more reliable and accurate predictions

73%



IMPORTANT FEATURES

- Income
- Age
- Experience
- Job years
- House years



RECOMMENDATIONS



- Use the model's insights to improve the screening process, giving high-risk applicants additional scrutiny before approval.

Nº1



- Develop marketing strategies aimed at attracting low-risk applicants by highlighting favorable loan terms and conditions.

Nº2



- Regularly update the predictive model with new data to maintain its accuracy and relevance.

Nº3

FUTURE PROJECT

- Alternative data that can enhance the model's predictive power and provide a more comprehensive risk assessment.

PROJECT 1

- Evaluate the model's performance on loan data from different countries to assess its adaptability and effectiveness in various markets.

PROJECT 2

QUESTIONS

