

Loan Prediction Data Analysis - Summary Report

1. Objective

This analysis aims to understand the profile of loan applicants, assess their financial stability, and evaluate factors that influence loan risk. The goal is to help financial institutions improve loan approval processes and develop targeted loan products.

2. Data Overview

- Total Customers Analyzed: Based on dataset size (number of rows)
- Key Features: Age, Income, Marital Status, House Ownership, Car Ownership, Profession, City, State, and Risk Flag
(0 = Low Risk, 1 = High Risk)

3. Key Insights from Analysis

1. Age vs Loan Risk

- High-risk customers are mainly in the 21-35 years age group.
- Customers aged 50+ years show lower risk, likely due to stable jobs and income history.

2. Income Distribution & Risk

- Income ranges from Rs. 10,310 to nearly Rs. 1 crore.
- Customers earning less than Rs. 5 lakh are more likely to be high-risk.
 - Some high-income customers (Rs. 70 lakh+) are still flagged high-risk, indicating income alone isn't enough.

3. Marital Status and Risk

- Married customers tend to have lower risk profiles than singles.

4. House Ownership and Risk

- Homeowners have lower risk compared to renters.

5. Job Experience and Risk

- Applicants with less than 3 years of experience show higher risk.

4. Risk Flag Distribution and Patterns

Risk distribution analysis highlights that risk patterns differ across marital status, house ownership, car ownership, and income levels, showing the need for multi-dimensional risk assessment.

5. Top Professions and Cities

- Top professions applying for loans include Software Engineers, Accountants, and Sales Executives.
- Cities like Bhubaneswar, Alappuzha, Rewa, and Parbhani show the highest loan demand.

6. Business Recommendations

- Build a multi-factor approval system considering Age, Income, Marital Status, Home Ownership, and Employment History.
- Design special loan products for young professionals with limited experience.
- Offer financial literacy programs for younger applicants.
- Use personalized marketing for married vs single customers and homeowners vs renters.
- Focus marketing campaigns in high-demand cities identified in the analysis.

Loan Prediction Data Analysis - Summary Report

7. Conclusion

This data-driven loan risk analysis helps financial institutions move from income-centric approval processes to holistic profile-based approval, improving risk assessment and loan product design.