

## Default Rates and Risk Factors in Loan Portfolios

### Default Rate Overview:

14.2% of applicants in the dataset have defaulted or charged off.

### Loan Characteristics:

Loan amounts are primarily in the range of 6,000 to 16,000.

Interest rates are spread between 8% to 14%.

Majority of applicants have an annual income between 40,000 to 90,000.

### Loan Duration and Purposes:

74.75% of applicants opt for a 36-month loan duration.

Top loan purposes with more than 5% applicants: Debt Consolidation (52.4%), Credit Card (14.2%), Home Improvement (8.1%), Major Purchase (6.2%), Small Business (5.0%).

### Applicant Profiles:

Majority fall under Category B (30.3%), followed by A and C at 25.6% and 20.3% respectively.

Applicants for loans increased over the years, with a peak in 2011.

More applicants belong to the middle-level employment category (4 to 8 years - 31.9%).

### Correlation Analysis:

Loan amount, funded amount, and funded amount investment are closely correlated.

### Loan Duration Impact:

75% opt for a 36-month loan, with a 66.8% repayment rate and 7.9% charged off.

25% opt for 60 months, with a 6.3% charge-off rate.

### Risk Factors:

Verified income applicants seem to default more.

Renters and mortgage holders are more likely to default compared to homeowners.

Higher loan amounts, interest rates, and debt-to-income ratios correlate with higher default rates.

### Bivariate Analysis:

Applicants with a 36-month term (7.4%), rented houses (7.0%), mortgage (6.1%), very high loan amounts ( $\geq 15000$  - 5.1%), very high-interest rates ( $\geq 14\%$  - 6.6%), low annual income (4.2%), and Grade B (3.6%) are more likely to default.

### Default rates for specific loan purposes:

Debt Consolidation (8.0%), Credit Card (1.5%), Small Business (1.4%), Home Improvement (1.0%), Major Purchase (0.6%).

Small business loans, especially with low to medium annual income and a 60-month term, show higher default rates.

### Key Parameters for Analysis Conclusion:

Interest rate, purpose, grade, term, employment length, and annual income are crucial factors.

### Inference and Recommendation:

Applicants with low income and high-interest loans, especially for small businesses with longer durations, pose a higher risk of default. Extra caution is advised in lending to such applicants.