

PROSPER LOAN DATA ANALYSIS REPORT

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OVERVIEW OF THE DATASET

The dataset contains information of about 150K loaners that patronizes Prosper Loan. It has information about the loaners' credit scores, loan status, employment status, occupation, amongst other variables. There are 81 fields for the dataset.

Each Field (columns) are described [Here](#)

DATA CLEANING

Using Feature Engineering to select the features most important for my analysis, I selected the columns below:

- **ListingKey:** Unique key for each listing, same value as the 'key' used in the listing object in the API.
- **ListingNumber:** The number that uniquely identifies the listing to the public as displayed on the website.
- **ListingCreationDate:** The date the listing was created.
- **Term:** The length of the loan expressed in months.
- **LoanStatus:** The current status of the loan: Cancelled, Chargedoff, Completed, Current, Defaulted, FinalPaymentInProgress, PastDue. The PastDue status will be accompanied by a delinquency bucket.
- **BorrowerAPR:** The Borrower's Annual Percentage Rate (APR) for the loan.
- **ProsperScore:** A custom risk score built using historical Prosper data. The score ranges from 1–10, with 10 being the best, or lowest risk score. Applicable for loans originated after July 2009.
- **ListingCategory (numeric):** The category of the listing that the borrower selected when posting their listing: 0 – Not Available, 1 – Debt Consolidation, 2 – Home Improvement, 3 – Business, 4 – Personal Loan, 5 – Student Use, 6 – Auto, 7– Other, 8 – Baby&Adoption, 9 – Boat, 10 – Cosmetic Procedure, 11 – Engagement Ring, 12 – Green Loans, 13 – Household Expenses, 14 – Large Purchases, 15 – Medical/Dental, 16 – Motorcycle, 17 – RV, 18 – Taxes, 19 – Vacation, 20 – Wedding Loans
- **BorrowerState:** The two letter abbreviation of the state of the address of the borrower at the time the Listing was created.

- **Occupation:** The Occupation selected by the Borrower at the time they created the listing.
- **EmploymentStatus:** The employment status of the borrower at the time they posted the listing.
- **EmploymentStatusDuration:** The length in months of the employment status at the time the listing was created.
- **IsBorrowerHomeowner:** A Borrower will be classified as a homeowner if they have a mortgage on their credit profile or provide documentation confirming they are a homeowner.
- **CurrentlyInGroup:** Specifies whether or not the Borrower was in a group at the time the listing was created.
- **TotalInquiries:** Total number of inquiries at the time the credit profile was pulled.
- **DebtToIncomeRatio:** The debt to income ratio of the borrower at the time the credit profile was pulled. This value is Null if the debt to income ratio is not available. This value is capped at 10.01 (any debt to income ratio larger than 1000% will be returned as 1001%).
- **IncomeRange:** The income range of the borrower at the time the listing was created.
- **StatedMonthlyIncome:** The monthly income the borrower stated at the time the listing was created.
- **LoanOriginalAmount:** The origination amount of the loan.
- **Recommendations:** Number of recommendations the borrower had at the time the listing was created.

SUMMARY OF ANALYSIS

From the Analysis made, Here are the insights and conclusions I came up with:

- 1) There are 3 terms from the Dataset provided which are known by the number of months of the Loan. Term 12 which is for 12 months, Term 36 which is for 36 months and Term 60 which is for 60 months.
 - 77.04% of the Borrowers are in the Term 36
 - 21.54% of them are in Term 60
 - the remaining 1.42% are in Term 12
- 2) Though over 75% of the Borrowers are in the Term 36, Term 60 still has the highest Loan amount requested on average. Across all terms, Home Owners request for larger loan amount than Borrowers who are not loan Owners
- 3) Over 5000 of the Borrowers are still on the current loan while close to 4000 of them have completed their loans. Almost 500 of them have defaulted
- 4) 2013 recorded the year with the highest number of Loan requests. January is the month of the year with the highest number of the loan requests.
- 5) The monthly Income of the borrower might affect their Loan status. The Borrowers who have Defaulted, Charged off and Cancelled all have a low average monthly income.
- 6) From the Loan status, there are more Borrowers in the Current Loan status but most of them are in the income range of \$50000 – 74,999
- 7) The top Earning Occupation per month are Doctor, Attorney, Judge, Executive and Dentist. The least Earning Occupation are Students, Teacher, Waiter/Waitress, Nurses and Food Service.

- 8) According to [investopedia](#), A general rule of thumb is to keep your overall debt-to-income ratio at or below 43%. Debt To Income ratio greater than 50% means that the borrower is not in a good place financially to take loan.

Using the benchmark of 50% for the Debt to Income ratio, we can see that all the borrowers in Term 60 and Term 12 do not exceed the benchmark which means that they are not struggling with their loan. In term 36, Borrowers that are Not Employed, Self Employed and Part time for their Employment status are the individuals who have thier average Debt to Income ratio above 0.5, therefore they mostly struggle with paying their loan

- 9) Using the benchmark of 50% for the Debt to Income ratio, The higher Debt to Income Ratio were observed for Borrowers that were Not Employed and Borrowers earning \$1 – 24999. They are the group of Borrowers struggling with their loan

Conclusion

In Summary, The Borrowers struggling with their loan are the Unemployed and the Borrowers earning between \$1 – 24,999