

Dynamic Risk Profiling and Performance Analysis in Consumer Lending

Objective:

The objective of this case study is to apply advanced data analysis techniques using Excel to deeply understand and effectively manage a loan portfolio. This involves assessing loan risk profiles, evaluating financial performance metrics, gaining insights into borrower behaviours, and ultimately, developing a comprehensive, interactive Excel dashboard. These efforts aim to provide strategic recommendations for optimizing loan portfolio management, mitigating risks, and enhancing decision-making processes for financial institutions and stakeholders in the consumer lending sector.

Dataset link: C:\Users\Tilak R\Desktop\loan_final313 .csv

Key Finding's from the dashboard:

We have followed a structured approach where we meticulously cleaned the data, analysed the data and created insights using visualization from the dataset.

We have divided the analysis into two dashboards,

1.**Summary Dashboard:** Provides the summary of the entire dataset and provides insightful insights.

2.**Overview Dashboard:** Provides the overview of the entire dataset and provides insightful insights.

Summary Dashboard Key Feature's:

1. The Total Loan Application were found out to be 70 K.
- 2.The Total loan amount was 984.4 million dollars.
- 3.Total Payment Received was 840.4 million dollars.
- 4.Average interest rate was found out to be 13.69.
5. Average DTI was found out to be 16.99.
- 6.Total Good loan percentage is 87.19.
- 7.Bad loan percentage is 12.81.
- 8.Ulster had the highest loan amount among the regions with 243.7 million dollars while Munster has the lowest loan amount with 114.4 million dollars.

Purpose: The purpose of the loan (e.g., debt consolidation, home improvement).

Types of purpose:

- 1.Car
- 2.Credit card
- 3.Debt Consolidation
- 4.Educational
- 5.Home improvement
- 6.House
- 7.Major Purpose
- 8.Medical
- 9.Moving

10.Other

11.Renewable energy

12.Small business

13.Vacation

14.Wedding

Grade wise summary:

Grade: The loan grade, which is typically an assessment of the loan's risk.



Grade wise summary for Medical purpose :

It has 85.08 % Good loan and 14.92 % Bad loan.

Grade	Total Loan Application	Total Loan Amount (Million \$)	Total Payment Received (Million \$)	Average Interest rate	Average DTI
A	100	0.8	0.8	7.32	12.71
B	200	1.4	1.2	11.44	14.74
C	200	1.3	1.1	14.54	17.93
D	200	1.3	1.1	17.76	17.39
E	100	0.7	0.7	20.68	16.40
F	0	0.4	0.3	23.83	17.59
G	0	0.1	0	24.94	14.12

Overview Dashboard Key Feature's:

1. Default rate was 14.53 in 2013 which was found to be highest and lowest was found to be in 2007 with 11.86.
2. It is evident that interest rate is decreasing over the years i.e it was 32% in 2007 and 8% in 2014.
3. The demand for loan amount has been increasing significantly over the years with 2013 being the highest with 437.8 million dollars.
4. People have preferred 60 months as Term Analysis with 51.8k count.
5. Group wise profit is clearly evident that grade c has the highest profit percentage and grade G has the lowest profit percentage.
6. Ulster has the highest total amount with 243.7 million dollars.
7. In terms of House ownership Mortgage has the highest loan application followed by Rent and Own.
8. The Default rate forecasting for the next five years was calculated and found out that in 2020 it could go to negative(-0.02).
9. The loan amount forecasting was estimated that it could sharply increase in the next five years and will be highest in 2020.

Conclusions:

1. The demand for loan is significantly increasing and the interest rate is significantly decreasing which is a sign of getting more assets to the bank.
2. The Default rate is decreasing significantly which is a good sign for banks to make more profit.

3.Ulster has the highest loan amount and prior focus should be given to it and more emphasis on Munster region should be given since it has less loan amount.

4.People are preferring a long-term analysis with 60 months as their period.