Loan Default Data Analysis Insights

1. Loan Amount Distribution

The loan amounts vary significantly across different applicants.

Key Insight: A large proportion of loans are for smaller amounts, but there are some high-value loans. This could indicate a mix of both personal and large-scale loans.

2. Credit Score Distribution

Most borrowers have a credit score between 600 and 800, with a few cases scoring lower and some reaching higher.

Key Insight: A large number of borrowers have good to excellent credit scores (600+), which suggests that the majority of the applicants are financially stable. However, there are some who may represent higher risk for loan default.

3. Loan Approval Status by Gender

The approval rate for loans appears fairly balanced between genders, with a slight variation in the number of approvals between male and female borrowers.

Key Insight: Gender does not appear to significantly influence loan approval. This may suggest fair lending practices based on gender, with potential room to examine further nuances, such as differences in loan sizes or types between genders.

4. Loan Approval Status by Region

There are noticeable differences in the approval rates based on region.

Key Insight: Certain regions, especially south and north, have varying approval rates, which could point to regional economic factors or lending conditions. This could guide future lending strategies tailored to specific regions to improve loan approvals.

5. Missing Data and Imputation

A few key columns, such as interest rates, income, and loan limits, had missing values, but they have been filled using statistical methods to ensure that the data remains robust and useful for analysis.

Key Insight: The missing data has been handled efficiently, but it is important to monitor for future gaps that might affect analysis quality.

6. Loan Approval Trends

Approval Rate: Approximately 25% of the loans were approved, indicating that loan rejection is quite common.

Key Insight: The low approval rate suggests that either loan criteria are strict or there may be higher perceived risk among applicants. This warrants a deeper investigation into the reasons behind loan rejections and how risk is being assessed.

Recommendations for Shareholders:

1. Target Smaller Loan Amounts: Since many loans are for smaller amounts, consider offering more flexible loan products tailored to the needs of lower-income groups or those seeking smaller loans.

2. Focus on Credit Score as a Key Factor: With most applicants having credit scores above 600,

consider offering targeted products for individuals in the higher credit score brackets while also designing products that mitigate risk for lower credit score applicants.

3. Examine Regional Disparities: Further analyze the regional loan approval disparities to understand if there are untapped markets where approval rates can be improved through localized strategies.

4. Monitor Missing Data: Keep an eye on any future data gaps and ensure data imputation techniques are updated to prevent loss of insights due to missing values.

5. Refine Risk Assessment Models: Given the significant number of loan rejections, it may be beneficial to refine the current risk assessment models or diversify lending options to improve approval rates, especially in underrepresented regions.