Data Analysis Assessment Report

Summary:

This data analysis report presents insights derived from the provided dataset, focusing on borrower segmentation, risk assessment, tenure completion categorization, and spend recommendations for communication channels.

1. Risk Assessment:

The borrowers were categorized into three risk levels based on their payment history:

- Unknown Risk: New customers
- Low Risk: Customers who have not bounced in the last 6 months
- Medium Risk: Customers who have bounced less than twice in the last 6 months, excluding the last month
- High Risk: All other customers

2. Tenure Completion Categorization:

Borrowers were segmented into three tenure completion categories:

- Early Tenure: Customers in the book for 3 months
- Late Tenure: Customers 3 months away from closing the loan
- Mid Tenure: All other customers

3. Spend Recommendation:

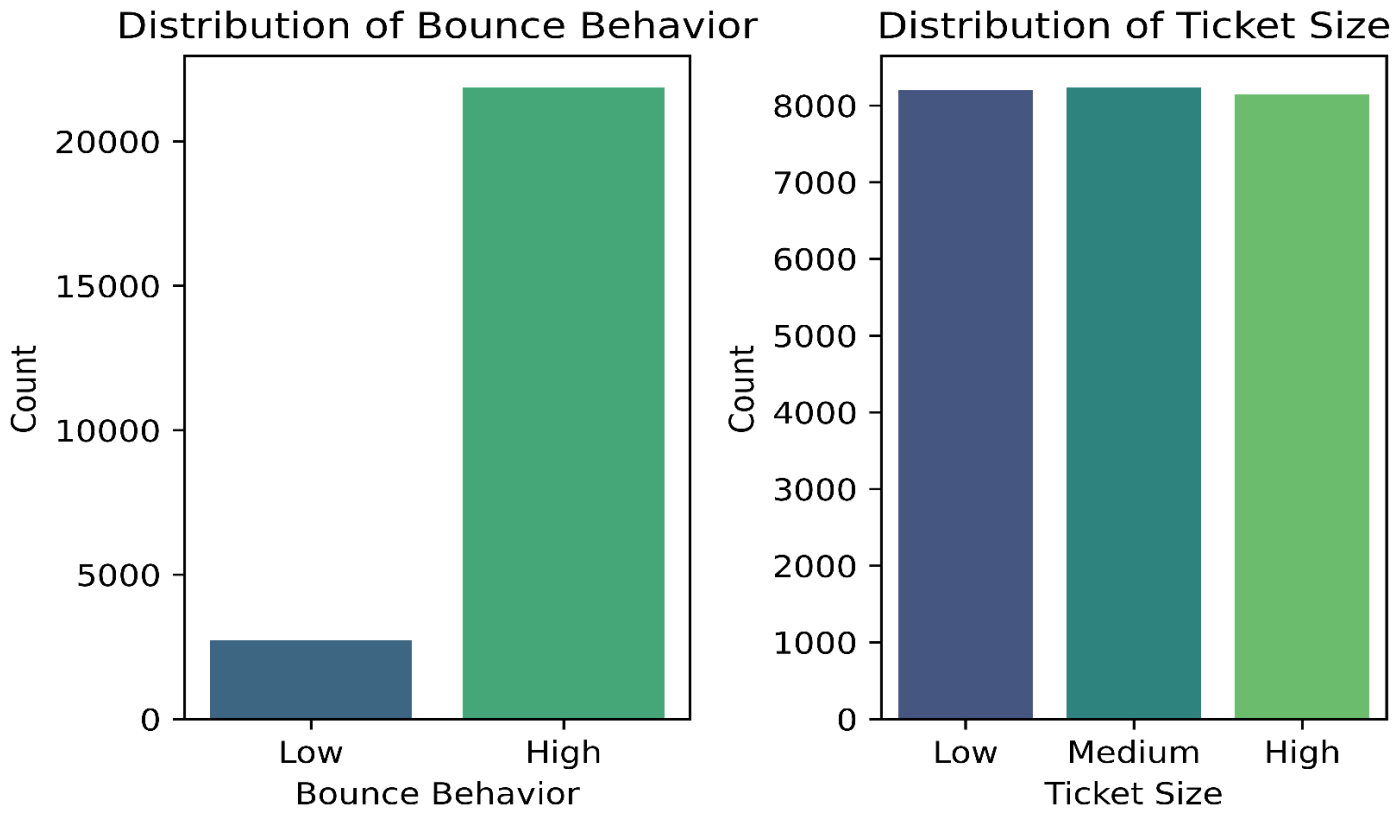
To minimize spend while maximizing on-time repayment, borrowers were allocated to three communication channels based on specific criteria:

- WhatsApp Bot: Cheapest option, allocated to borrowers not fitting other criteria.
- Voice Bot: Allocated to borrowers in metropolitan areas, with low bounce behavior, and low or medium-sized EMIs.
- Human Calling: Reserved for cases where absolutely necessary, such as non-metropolitan areas, high bounce behavior, and high-sized EMIs.

4. Insights:

- Interest Rate Variation Across Tenure Completion Categories: Loans with lower completion percentages tend to have higher interest rates, suggesting potential risk-based pricing or correlation between interest rates and completion rates.
- Tenure Completion Percentage: Loans in the "High" tenure completion category exhibit higher average completion percentages, indicating greater likelihood of repayment.

5. Submission Tasks:



- **Summary of borrowers (with graphs) based on risk:**
  To create a summary of borrowers based on risk, we can use the "Bounce Behavior" and "Ticket Size" columns as indicators of risk. Let's proceed by plotting the distribution of borrowers across different levels of bounce behavior and ticket sizes.

  The above graph shows distributions for "Bounce Behavior" and "Ticket Size" among borrowers:

  Bounce Behavior:

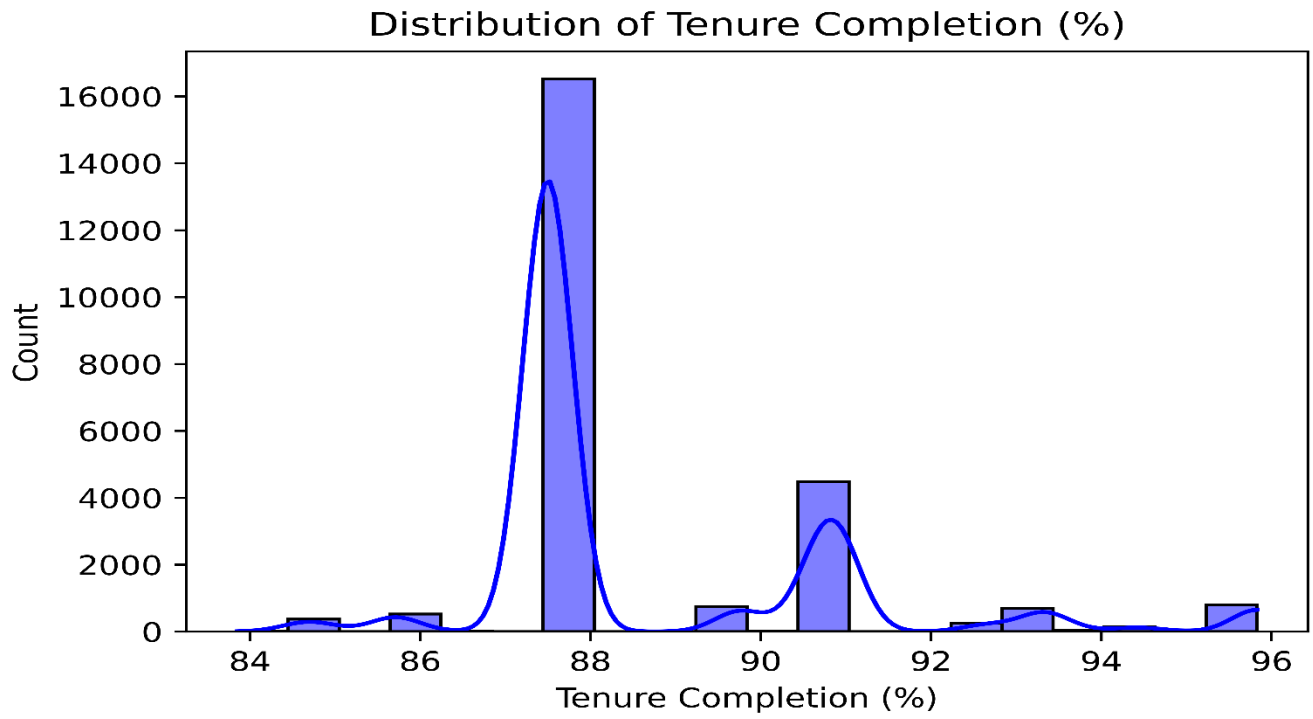
  The majority of borrowers exhibit a low bounce behavior, indicating a lower risk of default or delayed payments. However, there is a significant portion of borrowers with high bounce behavior, which may pose a higher risk.

- **Summary of borrowers (with graphs) based on ticket sizes:**
  The graph above illustrates the distribution of borrowers by their ticket sizes, which represent the size of their loans. This visualization helps in understanding the range and concentration of loan amounts within the dataset.

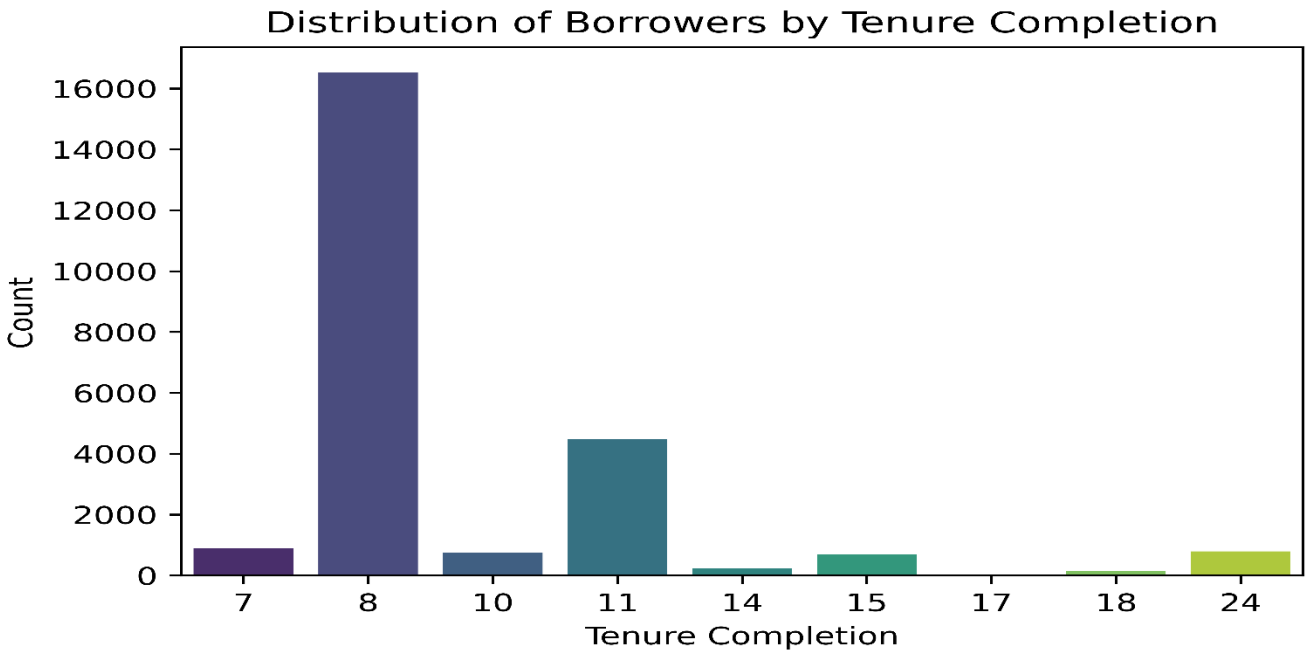
  Ticket Size:

  The distribution of ticket sizes shows that a considerable number of borrowers have medium to high ticket sizes. This suggests a diverse range of loan amounts among borrowers, which could impact their risk profile.

- **Summary of borrowers (with graphs) based on tenure completion:**



The graph displays the distribution of tenure completion percentages among borrowers. Tenure completion is calculated based on the ratio of the amount pending to the disbursed amount, indicating how much of their loan tenure borrowers have completed. This visualization helps in understanding the progress of borrowers in repaying their loans.



The distribution may also highlight the preference or necessity for borrowers to opt for shorter or longer tenures. Shorter tenures might indicate a preference for paying off loans quickly, possibly to minimize interest payments or due to the borrower's financial stability. Conversely, longer tenures could suggest larger loan amounts or a strategy to keep monthly payments manageable.

- **Spend recommendation - you need to articulate on how you have minimized spend while keeping in mind high repayment rate:**
  - Prioritize Low Bounce Behavior: Lend to borrowers with low bounce rates to reduce default risk and minimize losses.
  - Adjust Ticket Sizes: Offer smaller loans to high-risk profiles, balancing loan accessibility with manageable repayment structures.
  - Promote Short-to-Medium Tenures: Encourage tenures that align with high repayment rates, optimizing loan duration for borrower capability.
  - Leverage Data for Dynamic Risk Assessment: Continuously update lending criteria based on real-time borrower behavior and economic trends.
  - Invest in Financial Education: Enhance borrower decision-making through education, improving loan selection and repayment rates.

- **Any other interesting insights you have derived from the above data:**
  - Diverse Loan Preferences: The different loan tenures that borrowers choose to take out loans indicate a range of different financial demands and planning approaches.
  - Targeting tenure strategically can help minimize default risks and maximize lending strategies by concentrating on tenures with high rates of repayment.
  - Tailored Financial Advice: By providing specific financial guidance, lenders may be able to influence borrowers' tenure decisions and increase payback rates.
  - Enhanced Risk Models: Predictions and lending decisions can be improved by adding tenure and bounce behavior to risk models.
  - Education as a Tool: By filling up knowledge gaps, financial education programs can improve borrowing decisions and results.

Conclusion:

The analysis provides valuable insights into borrower segmentation, risk assessment, tenure completion, and spend optimization strategies. These insights can inform lending practices, risk management, and communication strategies to enhance borrower experience and improve repayment rates.

Credentials:

Name: Syed Mohammed Saqlain Hussain

Link : https://github.com/SyedsPortfolio/Loan-Risk-Analysis

Note * You can access my Python code and the modified excel sheet on my GitHub platform, and feel free to view my other projects as well. I would love to hear your insights on them*