CREDIT EDA CASE STUDY
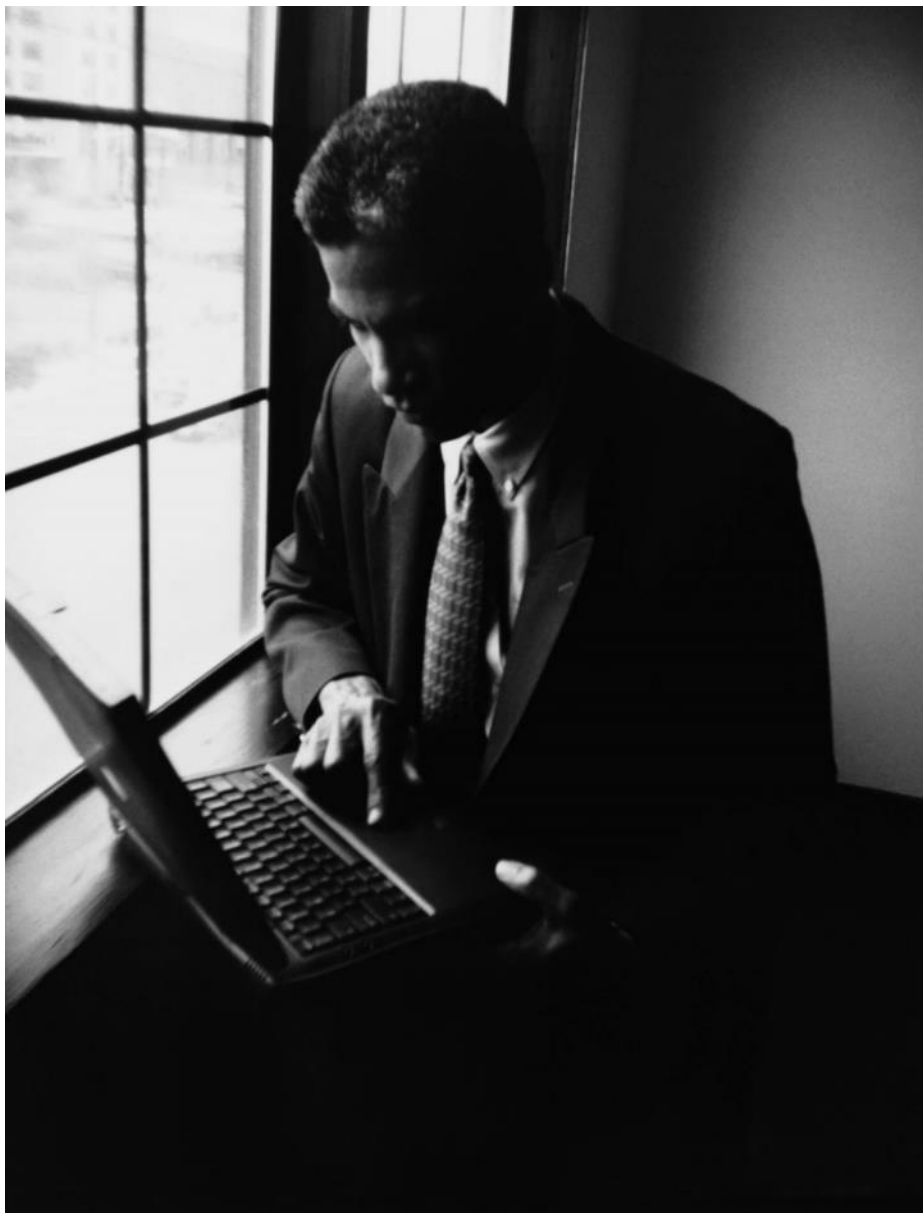
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AGENDA

❑ Introduction

❑ Objectives

❑ Descriptive Analysis

❑ Risk Assessment

❑ Summary

INTRODUCTION

❑ In the dynamic landscape of financial services, the accurate assessment of loan risk plays a pivotal role in shaping the strategies of lending institutions. As financial institutions strive to strike a delicate balance between expanding their lending portfolios and mitigating potential risks, the need for robust loan risk assessment analyses becomes increasingly paramount.

❑ This Credit case study aims to delve into the intricate factors that influence the creditworthiness of borrowers, offering valuable insights to financial decision-makers. By leveraging advanced analytical tools

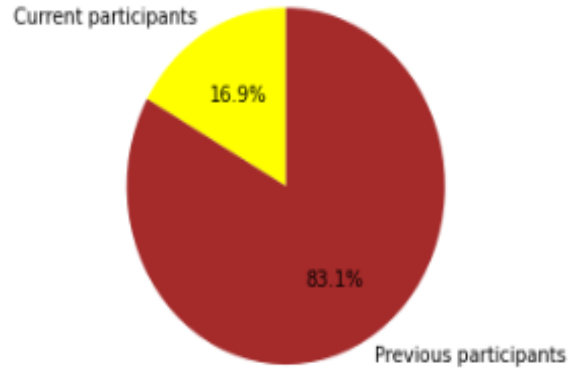❑ Python libraries used in this case study are Pandas, Matplotlib, and seaborn

OBJECTIVES

❑ To compile a comprehensive overview of borrower data.

❑ To identify patterns, trends, and risk indicators that can

significantly impact the loan approval process.

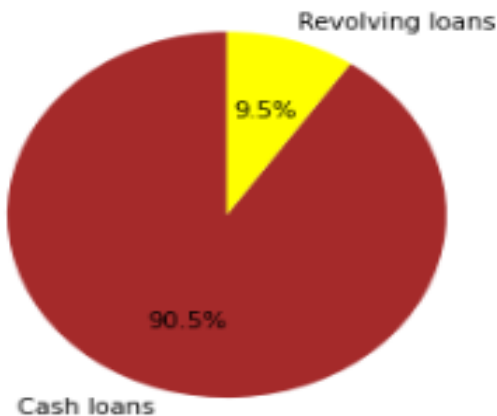❑ To develop robust measure of credit loan risk assessment.

# Descriptive Analysis

Total Applicants

Contract type

❑ The analysis reveals a substantial decline in the number of borrowers seeking loans. Previously, over 1 million borrowers applied for loans, but recent records indicate a stark reduction to less than 500 applicants. This shift underscores a notable change in borrower behaviour or market conditions.

❑ Furthermore, Borrower preferences overwhelmingly favour cash loans, constituting a staggering 90.5% of recent loan applications. This suggests a strong inclination toward traditional cash-based lending solutions.

❑ While borrowers do submit applications for revolving loans, the numbers are notably lower. This discrepancy highlights a clear distinction in borrower preferences, with a significant majority opting for the more conventional cash loan products.

# Descriptive Analysis

Proportion of Participants By Gender
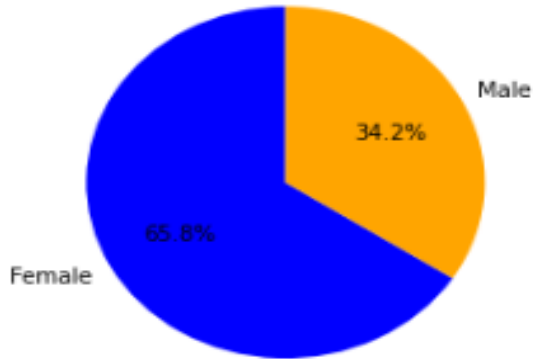
Count of Gender per Contract Type
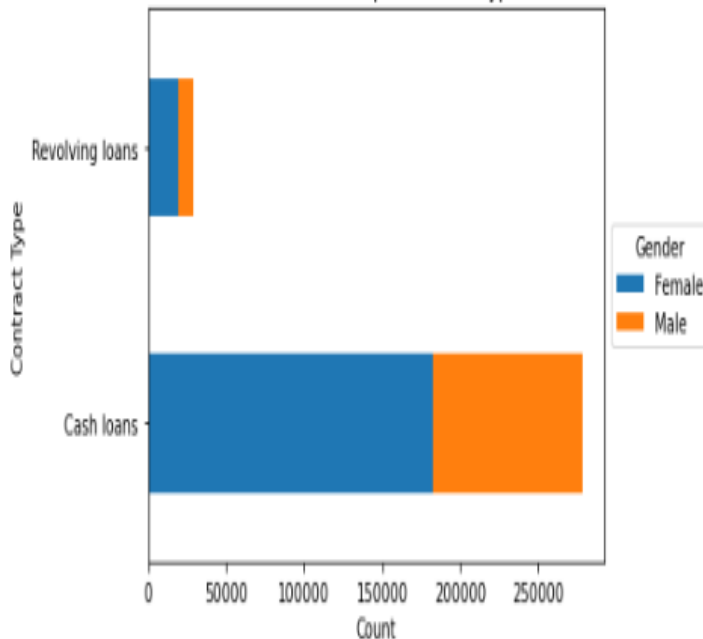
❑ The analysis unveils a significant gender disparity in loan applications, with females accounting for a substantial 65.8% of total applications. This indicates a pronounced inclination among women to seek financial assistance through loans.

❑ Notably, while the highest overall number of applications is for cash loans, women exhibit a fundamental preference for revolving loans, surpassing their male counterparts. Females submitted 19,648 applications for revolving loans, exceeding the 9,627 revolving loan applications received from men. This suggests a distinctive trend where women, in addition to their higher overall application numbers, also show a preference for revolving loans.

Descriptive Analysis


Count of Gender per Income Type

Housing type per Gender
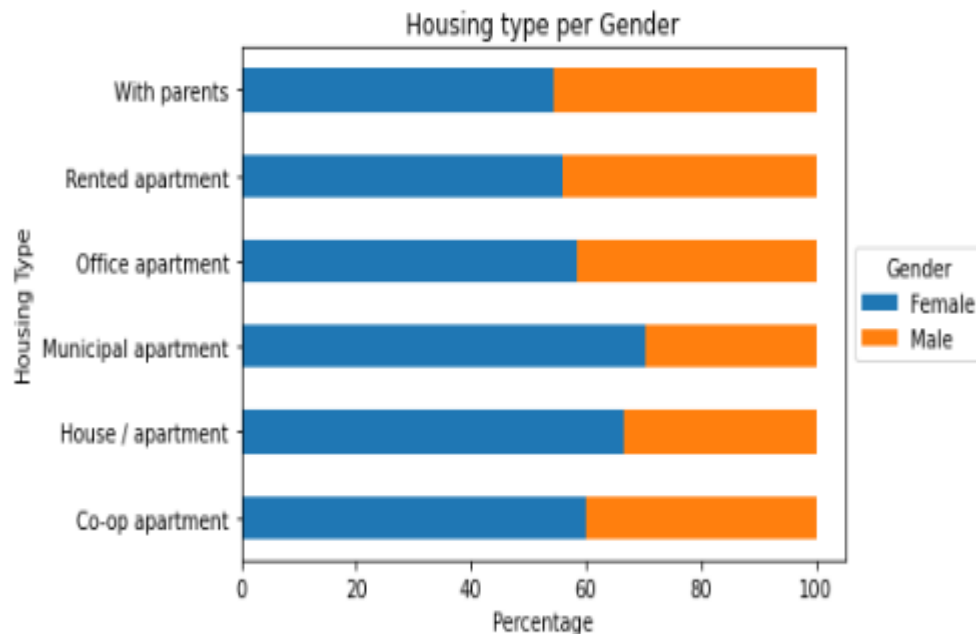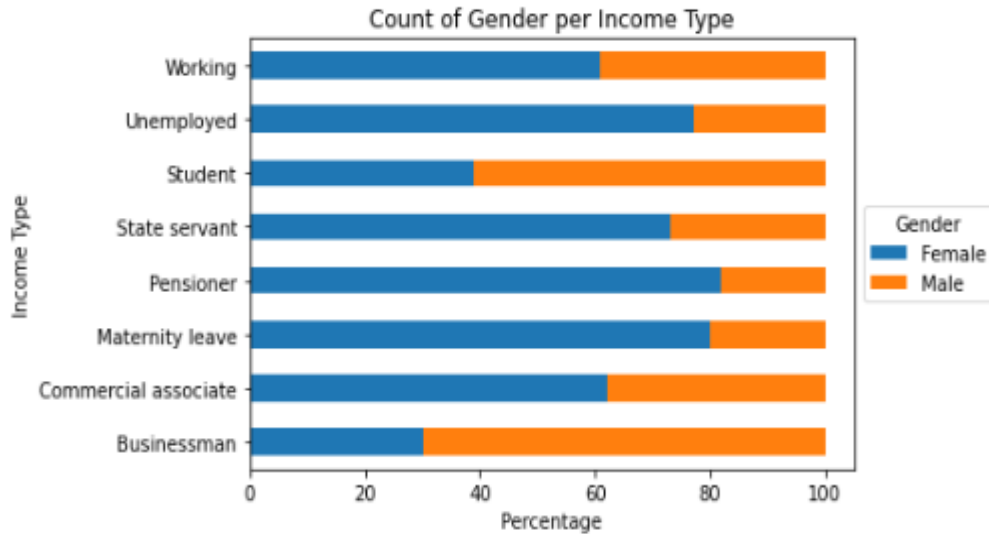
- The analysis delving into income and housing situations identifies three prominent applicant groups—pensioners, commercial associates, and the working class. These groups contribute significantly to the overall volume of loan applications, reflecting a diverse range of borrowers with varying financial backgrounds.

- Despite the higher overall population of female borrowers, a noteworthy shift in applicant types is observed among students and businessmen. This unexpected trend suggests that, in these specific demographic categories, male borrowers are submitting a relatively higher number of loan applications compared to their female counterparts. Understanding the factors driving this shift can provide valuable insights into the financial needs and aspirations of different gender groups.

- Majority of borrowers, totalling 272,865, reside in either houses or apartments, reflecting a preference for traditional residential setups. Interestingly, a smaller but notable group of 1,122 borrowers live in co-op apartments, indicating a diversity in housing choices among applicants.

7

Risk Assessment

Rejection Reasons per Job Type
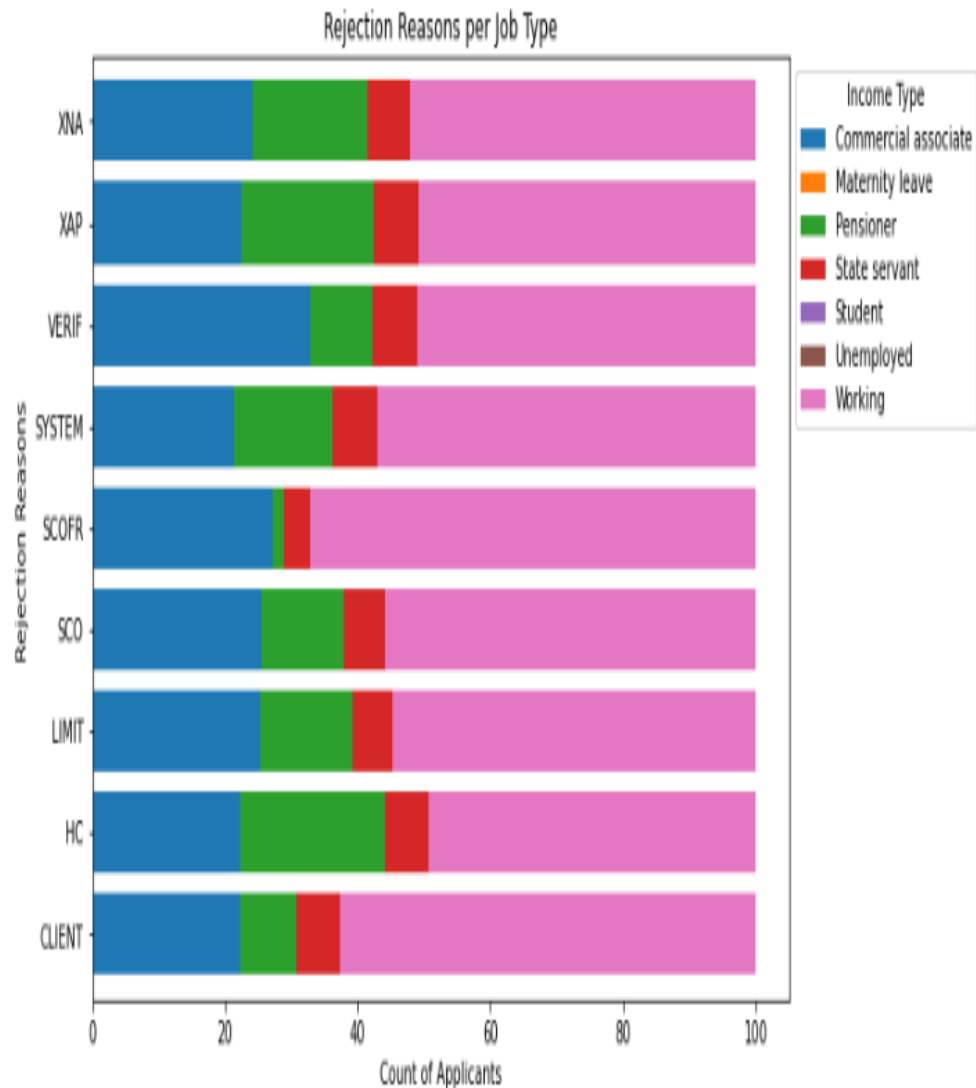
- Loan applications faced rejection for nine reasons – CLIENT, HC, SCO, LIMIT, SCOFR, VERIF, XAP, and VAR, each contributing to approximately 100 rejections across all borrower occupations.

- Working Class borrowers experienced significant rejections in all nine categories, notably in SCOFR, emphasizing the need for targeted risk assessment for this demographic.

- Commercial Associate borrowers ranked second in facing rejections, prompting the need for tailored risk mitigation strategies and refined lending practices for this group.

- Students faced fewer rejections compared to other occupations, suggesting a potentially lower risk profile. Understanding the factors contributing to this can inform strategies for accommodating student borrowers.

- Borrowers on maternity leave were never rejected, highlighting a trend where individuals on maternity leave are more likely to have their loan applications approved, offering insights into financial stability during this period.

Risk Assessment

Previous Contract Approval per Average Credit
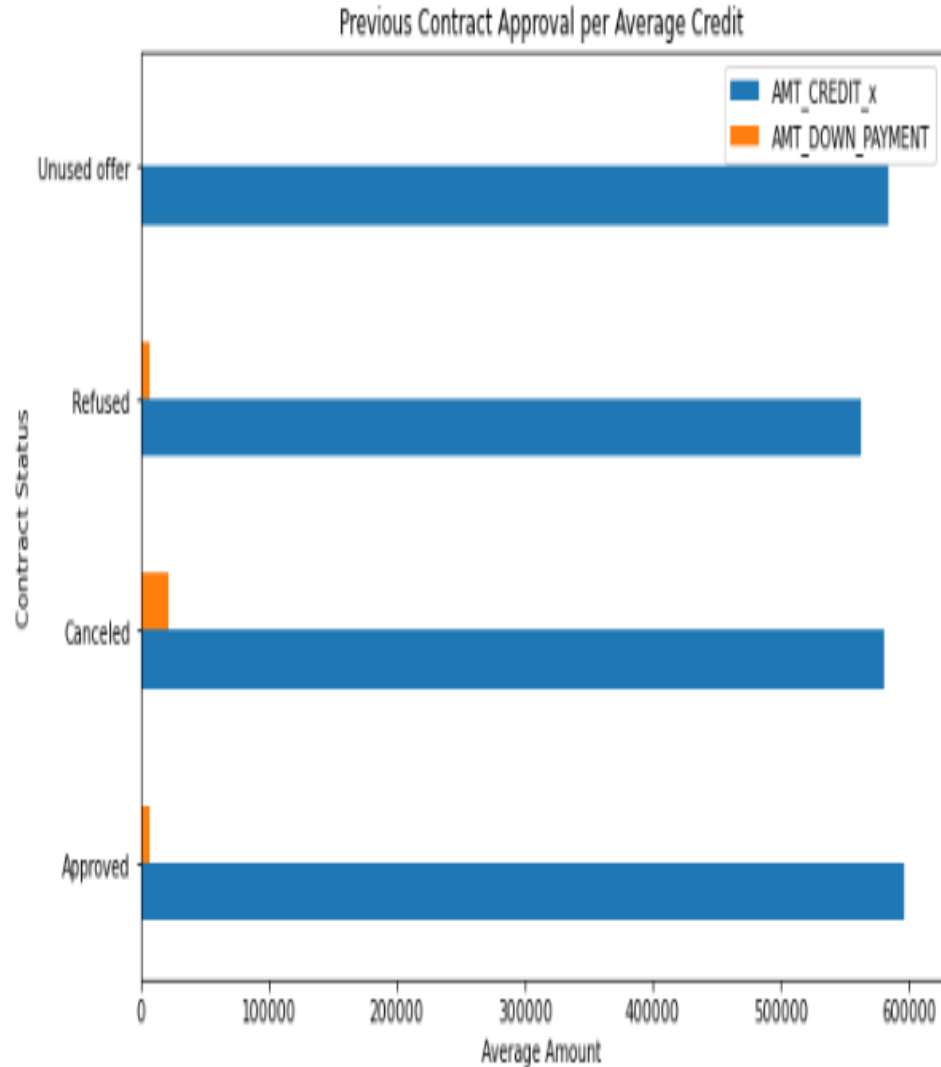
- ❑ The observation that the average credit requested is approximately the same ($60,000) for both cash and revolving loans suggests that borrowers, on average, seek similar financial amounts regardless of the loan type. This consistency can be factored into risk assessment models to establish baseline expectations for credit request.

- ❑ The significantly lower down payment for UNUSED OFFER applications raises questions about the financial commitment and behaviour of borrowers in these cases. This insight can be considered in risk assessment, indicating a potential need for additional scrutiny when evaluating applications with low down payments, especially those resulting in unused offers.

- ❑ The unexpected finding of significantly higher down payments in cancelled applications raises flags for risk assessment. Understanding the reasons behind these high down payments in cancelled applications is crucial, as it may indicate unique risk factors or circumstances that can inform risk mitigation strategies.

- ❑ The similarity in down payments for both REFUSED and APPROVED applications implies that, in certain cases, the down payment may not be a strong differentiator between successful and unsuccessful applications. Risk assessment models should account for other relevant factors that contribute to a more comprehensive evaluation.

SUMMARY

❑ Lenders can use these findings to enhance risk assessment models, recognizing patterns that may signal varying levels of risk in different scenarios.

❑ A nuanced approach to risk assessment is recommended, considering not only credit amounts and down payments but also the context of application statuses.

❑ Continuous monitoring and adaptation of risk strategies based on evolving borrower behaviours ensure a dynamic and effective risk management framework.

THANK YOU