

Bank Marketing Campaign Analysis — Project Report

1. Introduction

Our project analyzes a marketing campaign run by a bank in the United Kingdom, aiming to attract personal loans.

The total personal loans for this year reached approximately £1.5 billion.

The dataset contains around 41,000 records for the year 2022.

Objective: Understand customer behavior, analyze campaign performance, and provide actionable insights to improve future marketing campaigns.

2. Methodology

1. Exploratory Data Analysis (EDA)

- Analyze demographic features: age, education, and job.
- Compare the current campaign outcomes with the previous year.

2. Campaign Analysis

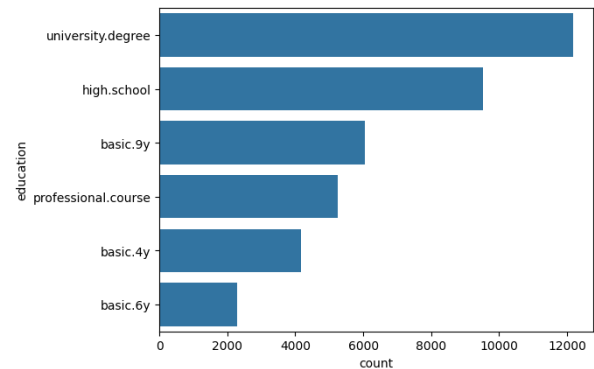
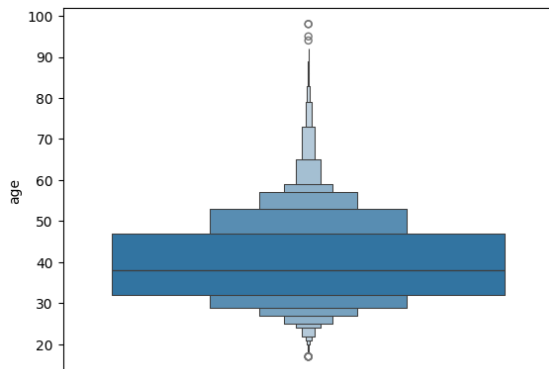
- Evaluate the effect of contact duration and number of contacts on campaign success.
- Assess the impact of macroeconomic indicators: Interest Rate and Consumer Price Index (CPI).

3. Correlation & Statistical Testing

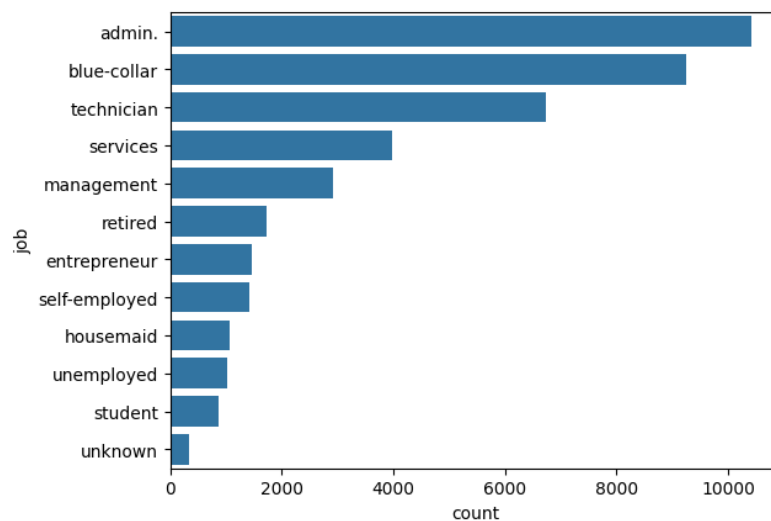
- Use Pearson correlation to test the significance of relationships, particularly between contact duration and campaign outcomes.

3. Data Analysis

3.1 Demographics



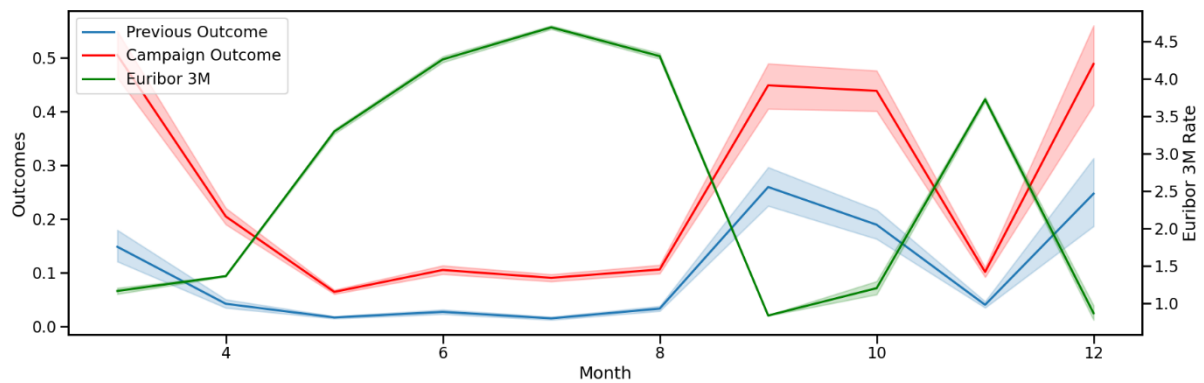
- Age: Most clients are between 30–45 years old.
- Education: Majority hold a University Degree, followed by High School.



- Job: Most clients work in administrative roles, followed by technicians and blue-collar positions.

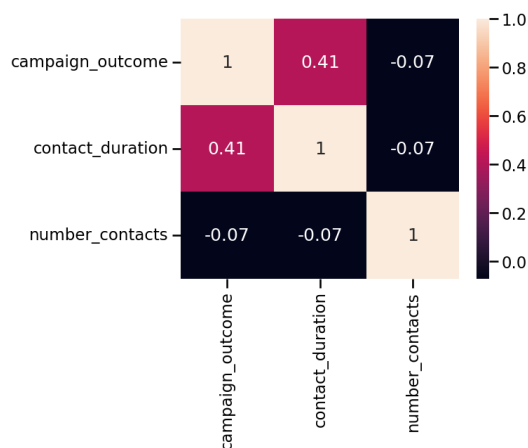
This indicates the campaign is currently focused on a specific set of clients.

3.2 Campaign Outcomes



- Comparing 2022 (blue) to the previous year (red) shows:
 - Similar patterns of rises and drops.
 - The current campaign performed significantly better overall.
- Economic impact:
 - Interest rate is a key driver: lower interest rates correspond to higher campaign success.
 - Example: September had low rates, leading to peak campaign results.

3.3 Contact Analysis



- Number of contacts: No strong effect on campaign outcomes.
- Contact duration: Positively associated with campaign outcomes (moderate correlation).
- Pearson test confirms that this relationship is statistically significant and can inform strategy.

3.4 Economic Indicators

- Interest Rate: Lower interest rates increase client responsiveness.
- Consumer Price Index (CPI): If CPI is expected to rise, increase marketing efforts at least one month before the predicted rise to maximize results.

4. Key Insights

1. Age Groups:
 - Focus on additional age groups beyond the currently targeted 30–45 range, including slightly younger or older clients.
2. Contact Strategy:
 - Number of calls has little impact.
 - Longer calls improve outcomes — quality over quantity.
3. Interest Rate Timing:
 - Concentrate campaign spending when interest rates start decreasing.
4. CPI Forecasting:
 - Adjust campaign intensity ahead of predicted increases in CPI (minimum one month in advance).

5. Recommendations

1. Expand Age Targeting
 - Include under-targeted age segments to increase overall response without additional costs.
2. Optimize Call Quality
 - Train agents to focus on longer, more engaging conversations rather than increasing the number of calls.
3. Align Campaigns with Economic Trends
 - Monitor interest rates and CPI forecasts to schedule campaigns at optimal times.

4. Focus Resources Strategically

- Prioritize clients with previous positive responses and adjust efforts based on ongoing analysis.

6. Conclusion

- Campaign success is most influenced by age, contact duration, and economic factors.
- Applying these insights can improve ROI and efficiency for future campaigns.
- The data enables the bank to design smarter, more targeted campaigns aligned with market and economic conditions.