

ASSIGNMENT 4

VALIDATION & COMMUNICATING RESULTS

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1. Overview and Business Context

Banco Mais has a campaign inefficiency problem. Calls are frequently made to customers who will not subscribe. The current overall subscription rate is 40%. The business objective is to identify and target high value customer groups to increase this rate and reduce wasted marketing resources.

This analysis used 10,000 customer records. The data provided key signals (age existing debt and wealth) to predict which customers are most likely to accept the term deposit offer.

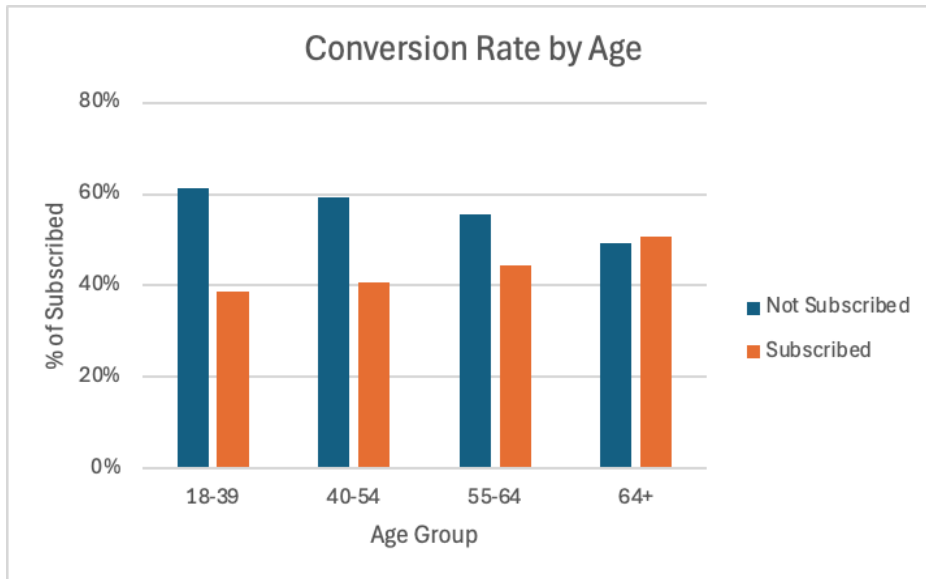
2. Key Findings: Segmentation and Predictors

The analysis confirmed three primary predictors of subscription success Age Balance and Loan Status.

- **Age is the Primary Driver of Subscription:** The 64+ age segment converts at a high rate of 51%. This conversion rate is significantly higher than the 40% baseline. Age is the strongest factor found in the data that predicts a customer's decision.
- **Existing Debt is a Red Flag:** If a customer has a personal loan, don't call them. Customers with a loan convert at a low rate of 36%. This segment should be immediately excluded from future outreach efforts to improve efficiency.
- **Model Limitation:** The initial model confirms these factors, but these three signals only explain a tiny part of the final decision. While the identified segments offer an immediate lift, the bank must note that almost all (over 99% of the behavior) of the underlying decision factors remain unknown.

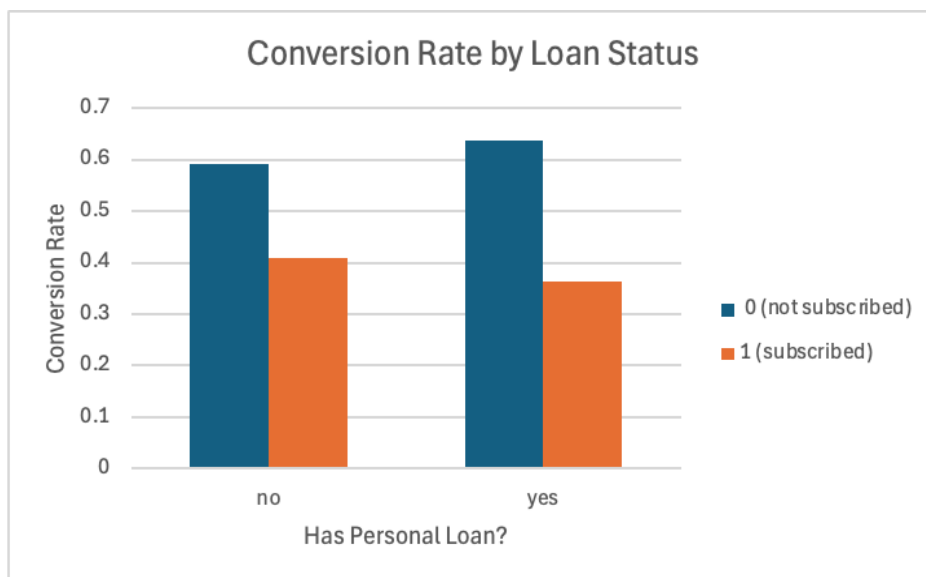
3. Visuals and Interpretation

Chart 1: Conversion Rate by Age Group



Interpretation: This chart shows profitability goes up with age. The 51% peak in the 64+ group confirms that the current target strategy (focused on younger median age customers) is incorrect. The bank must shift resources to clients nearing or in retirement age.

Chart 2: Conversion Rate by Loan Status



Interpretation: This chart proves debt carrying customers are unproductive. The low 36% rate for the loan segment confirms that excluding this group will successfully raise the average campaign success rate above 40%.

4. Recommendations

I recommend the immediate adoption of a Targeting Strategy. Focus on Age and Exclude Debt Holders. This will maximize the conversion rate and lower costs.

- **Prioritize Age:** Shift budget and labor hours to the 55+ and 64+ age segments.
- **Exclude Unprofitable Segments:** Implement a firm rule to stop calling any customer identified as having a personal loan.
- **Tailor Messaging:** Make sure all marketing for older clients focuses on security, fixed rates, and retirement.

Ethical, Privacy, and Governance Considerations

When the bank uses customer data for targeting, it must follow strict rules.

- **Privacy:** Future models must rely on anonymous IDs to protect identity.
- **Security:** Raw customer data must be encrypted and fully protected.
- **Fairness/Bias:** The organization must audit this targeting model to ensure it does not illegally discriminate against younger or lower balance clients.

5. Conclusion

This analysis confirms three critical targeting signals that provide an immediate path to improvement. The best path forward is to focus efforts on the 64+ age segment and discontinue outreach to debt carrying clients.

Crucially the next step is to return to the data source and find the rest of the missing factors to build a comprehensive long term strategy.