Campaign for selling personal loans.

This case is about a bank (Thera Bank) which has a growing customer base. Majority of these customers are liability customers (depositors) with varying size of deposits. The number of customers who are also borrowers (asset customers) is quite small, and the bank is interested in expanding this base rapidly to bring in more loan business and in the process, earn more through the interest on loans. In particular, the management wants to explore ways of converting its liability customers to personal loan customers (while retaining them as depositors). A campaign that the bank ran last year for liability customers showed a healthy conversion rate of over 9% success. This has encouraged the retail marketing department to devise campaigns with better target marketing to increase the success ratio with minimal budget.

The department wants to build a model that will help them identify the potential customers who have higher probability of purchasing the loan. This will increase the success ratio while at the same time reduce the cost of the campaign.

The csv file provided contains data on 5000 customers. The data includes customer demographic information (age, income, etc.), the customer's relationship with the bank (mortgage, securities account, etc.), and the customer response to the last personal loan campaign (Personal Loan). Among these 5000 customers, only 480 (= 9.6%) accepted the personal loan that was offered to them in the earlier campaign.

1. What are the insights that you can infer from studying the various attributes? Are there any specific points that you would like to bring attention to?
2. What are the approaches that can be used to model the likelihood of a customer buying personal loans?
3. Of the approaches tried, which model is the best when it comes to predictive performance in this case? Are their any drawbacks in your chosen approach? How would you adjust for it?
4. Which are the most important attributes which influence a customer's decision to go for a loan? What actions can you recommend in order to improve the campaign to sell more loans?
5. Are their any improvements from a data collection perspective that you would like to suggest?
6. Submit your technical analysis in a python notebook. Also create a summary report explaining your insights and recommendations in plain and simple words such that non-analyst can understand it.