**Thera Bank: How to make personal loan business out of existing clients?**

By: Jasmine Zeng

**Abstract**

Thera Bank Management is working on selling personal loan to existing liability customer. Current transition rate is 9%, and they want to know how they can tailor the campaign to increase the transition rate so they can make the max out of the existing clients.

The potential DS application here is that we can use a classification model to predict whether a client will respond to the personal loan campaign and target against those who wouldn’t.

**Design (project scoping)**

* **Impact Hypothesis:**

impact hypothesis is “If the classification model I build could help increase the accuracy of predicting who will and won’t respond to the current personal loan campaign, Thera bank would be able to identify potential conversion clients.

* **Criteria For Success:**

From technique point: Accurate model

From business point: I would measure the result with the conversion rate change before and after we offer the targeted campaign to clients. An increase in conversion rate is an important criterion for success.

* **Assumption and Risk:**

Assumption 1: Thera bank would have enough liquidity.

Assumption 2: Clients who would take the personal loan does have a pattern or characteristic so that business could customize/target the offer. If there is not, then business can only customize the rate level, not loan purpose.

Risk 1: Bank does not have enough liquidity

Risk 2: failure in filtering out low credit score clients

**Data**

I use the personal loan data of Thera Bank. Data source: Kaggle( https://www.kaggle.com/teertha/personal-loan-modeling).

Each line represents a customer. The features include: 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).

**Key Visualization and Findings:**

1. Conservative Clients who have big spending needs are potential clients for personal loan

**Chart, bar chart

Description automatically generated**

After further investigation, we find that conservative clients with mortgage and a large family size are more likely to accept personal loan offer.

2.Clients who has CD with Thera Bank are more likely to accept personal loan offer

Graphical user interface, application

Description automatically generated

If we target these two group of people mentioned above, there would be a potential 11% increase in conversion rate.

**DS Application/ Solution Path**

* Classification Model
* Feature Engineering: spending power=credit card spending/income

**Tools**

* Excel for data processing
* Tableau for visualization
* Power point for presentation

**Communication**

Slides will be presented to Metis audience by Jasmine Zeng

Tableau workbook is also saved to my website: https://public.tableau.com/app/profile/jasmine7670/viz/Banksclient-Excercise/Dashboard2